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Hold First Paper Festival at Savannah, Ga.

Thousands Attend Interesting Exercises To Publicise Paper Making Advantages of South—D. C. Everest, President of American Paper and Pulp Association Speaks—Representative Industrial Concerns Make Displays.

[FROM OUR SPECIAL CORRESPONDENT]

SAVANNAH, Ga., April 24, 1939—Pageantry, parades, exhibitions and technical meetings featured the first Southern States Paper Festival held at Savannah, Ga., April 17-19, 1939. Pine trees and colorful bunting bedecked the streets, public buildings, hotels and the homes of this picturesque capital of the old deep South. Directing the myriad of events were Mr. and Mrs. D. G. Moon, whose reputation for managing such enterprises has become well known.

Thousands Come from Far and Near

The affair had many of the aspects of the famous Mardi Gras. Parades replete with beautiful floats representing the twelve Southern States and the main industries and commercial interests of Savannah were viewed by the thousands who came from far and near. Good weather contributed much to these events and protected the tons of crepe paper decorations to be seen everywhere. There could be no doubt in anyone's mind that the central theme was paper—plates, cups, table covers, and even the clothing at the costume parties.

Aside from the carnival attractions for the public there was an impressive serious side wherein the economic and technical problems akin to the industrial progress of the new South were considered. At these times, the State governors, foresters and industrial leaders presented their views on the fundamental economic questions. Most noteworthy of these was the splendid address by D. C. Everest, president of the American Paper and Pulp Association, who pointed out that although there may be sufficient forest acreage to support a larger Southern industry, great care should be exercised by prospective investors to carefully analyze the size and trend of the market that they expect to enter.

Address of D. C. Everest

Mr. Everest in part spoke as follows:

"You, have, in the South, a great supply of natural resources. You have a great potential supply of fast growing raw materials, which properly handled, will insure a continuing supply forever. You, also have efficiently managed properties, well designed and recently built, and well manned with engineers, technicians and salesmen. You have everything necessary for the establishment of a great pulp and paper development in the South, in fact, you have that development right now. As I said at the Jackson, Miss., meeting of the National Farm Chemurgic Council a few weeks ago, "There is, nor can there be, no physical reason why any kind of a paper mill cannot be constructed anywhere in the South. The whole question as I see it, is whether this development will go forward in an orderly manner keeping pace with increasing use or if we are to have waves of building activity every time there is a slump in general business activity. Unless there is some careful study made as to the need for increased production before additional plants are built, this industry will not prove successful from a financial standpoint. New competition will consistently keep earnings at a minimum. This business is the same as any other business, and the things which bring about over-expansion and excess productive capacity, which we have today, is the combination of men, money and cheap raw materials. By 'men' I mean managerial and engineering brains and labor, and of these you have plenty. It is the constant pressure to utilize some cheap natural resource which upsets the applecart in this industry. It may be gas, oil, wood or water power, all of which you have in abundance.

"In the case of the Canadian debacle in newsprint, which involved the building of mill capacity far in excess of potential demand, they had wood and water power coupled with the adequate flow of investing-capital. The result was a badly overdone development performance and many failures and loss of capital investments. This whole paper business has had its recurring period of 'indigestion', due to expansion in productive capacity in certain regions or in certain grades. I mentioned a moment ago the difficulties the industry experiences in over-expansion due to the pressure to utilize certain cheap raw materials. Once rags were the only source of paper making materials in this country. With the advent of mechanical and chemical wod pulps, many of these mills gave up the use of rags and switched to wood pulp. Rags were continued as the chief source of raw material for high grade writing papers.

"The use of these high grade papers has been quite well maintained but you have not heard of the build-

ing of a high grade writing mill in twenty-five years. Why? Because there has been no pressure for utilization of a cheap accumulation of raw materials. Rags have increased in value. A large portion of the supply is imported. The rayon development and the change in the styles in hosiery and other clothing, coupled with the fact that less clothing is worn eliminated the pressure of utilizing cheap raw material. This cellulose development for textiles affected your great cototn industry, as other cellulose developments have, from time to time, upset the paper industry.

"The chemical pulp industry, which is the source of at least 80 to 85 per cent of paper making materials today, is a relatively young industry. The actual development in this country really covers a period of only a little over sixty years, and the sulphate pulp industry, in which you are so deeply interested, only covers a period of about thirty years. Many of the products made from these pulps have been in use only ten to fifteen years. Take kraft board, for instance, the mill at Hopewell, Va., and the one at Ontonagon, Mich., were the first ones making cylinder kraft board and in 1926 produced only 26,000 tons. Fourdrinier kraft board was not produced until a year or two later but in 1938 there were 1,125,700 tons of all kinds of kraft board used.

"A tremendous increase, it is true, but during that period the producers were working on a new frontier. They had developed a better product and they were taking business away from both wood box manufacturers and also those making boxes from board made of waste papers. They had two products with which to compete. Due to the strength and light weight of their product, they were able to capture a majority of the wood box business and made great inroads on the so-called 'jute board' box business. Such a rate of growth in the industry cannot continue. Sometime they will have captured all the business they can get either because of the price route or because of any other economic factor. Then, they will be dependent entirely on the natural increase in growth of general business. The same is true in the kraft paper and bag busines. Both of these have experienced similar situations over the last twenty-five years as they took away business from sulphite papers either on account of strength, price or some other factor.

"Now what to do about all this mess we are in at present. As I see it, there are two constructive things which can be done. I notice that this morning you had a meeting of your Southern Pulpwood Conservation Association. The backing of that movement is in my opinion one of the most important things the manufacturers using forest products can do to perpetuate their industries. In this work you must have the co-operation of state and federal governments. We have had too many instances of forced cutting to avoid taxation. You have opportunity here, due to your growing conditions, to correct any mistakes in taxing policy which may have been made in the past, which now is not true in many other sections of the country. I sincerely hope that all of you will support the program of forest conservation. It is vital to the continuance of the industry.

"The second thing I wish to emphasize is the matter of technical research. Research not only in the field of utilizing new species of woods; in new processes of manufacture and in all other production problems, but in our present situation we are in need of research work on new uses.

FIRST ANNUAL LUNCHEON, SOUTHERN STATES PULP AND PAPER CLUB, SAVANNAH, GA., APRIL 18, 1939

Standing left to right: E. H. Ginn, General Electric Co.; W. F. Allen, L. A. Hawkins, General Electric Co.; T. Guy Woolford, President Georgia Forestry Association; H. T. Hulin, City of Savannah; D. C. Everest, President American Paper and Pulp Association; D. G. Moon, Chairman Southern States Pulp and Paper Club; F. T. Jamison, President National Paper Trade Association; H. V. Jenkins, Chairman Executive Committee, Southern Paper Festival Association; J. M. Jones, President Rotary Club of Savannah; E. R. Gay, V. P., Kraft Association; R. G. Macdonald, Secretary, TAPPI; Mrs. Carrie Land, widow of late Mr. Land, First Georgia Papermaker; E. H. Mayo.

"You have a meeting this afternoon of your Association. You have many members of TAPPI in the South and in all probability you will hold these regional meetings at frequent intervals.

"We need new uses for paper and paper board. As I have said many times there are no economical substitutes for paper or paper board. Remember that and as you review the whole field of paper activity in the past few years note the number of instances in which our products have been substituted for other materials. We have the highest consumption of paper and paper products per capita in this country of all the countries in the world. It is the job of our technical staffs to maintain that position.

"During the past ten years we have made more progress in technical development and new uses than for the previous twenty-five years. Eighty per cent of the papers made ten years ago, excluding newsprint, would not be acceptable in today's market. Relatively few of the products exhibited here today were manufactured ten years ago.

"Our hope lies in finding more uses. Co-operate with the technical men employed by your converter customers. Find out their requirements and knowing the characteristics of your products, make your suggestions to them. The gentlemen who have adopted as your number one purpose—'To stimulate and advance the use of the products of the pulp, paper and allied industries,' are to be commended.

"Research and development may be considered expensive, but properly conducted, it pays.

"It has been a pleasure for me to be with you today. You have done a wonderful job in the South in the production of papers and board. I sincerely hope you men who are engaged in engineering and technical work may make a still greater contribution through the discovery of new uses and I have confidence in your ability to do so."

The Story of the Pines

On three successive evenings a well portrayed theatrical spectacle and dramatic fantasy entitled "The Story of the Pines" was presented at the Municipal Auditorium. This pageant traced the history of paper from papyrus to present day products. The story of parchment, Chinese papermaking, old handmade papers of Arabia, Spain and of the early American mills were enacted. As a presentation of the story of paper to the public, the pageant served a useful purpose. A special effort was successfully made to encourage school children to view this dramatic presentation.

Educational Exhibits

Allied with the pageant at the Auditorium was an interesting exhibit showing the details of paper making, forest utilization and paper uses. Included among these exhibits were those sponsored by the following:

Champion Paper & Fibre Co.
"Product of the Pine," Armstrong Junior College.
Herty Foundation Laboratory.
Sears Roebuck & Company.
Union Bag & Paper Corporation.
Southern States Pulp and Paper Club.
Dixie Vortex Cups, manufactured at Darlington, S. C.
National Container Corporation.
F. W. Woolworth Company.
Chatham Paper Company.

D. G. MOON
Director of the Paper Festival

Sutherland Paper Company.
"Paper in Relation to Printing," from Harvard Tercentenary exhibit by William Bond Wheelwright.
Gardner Richardson Company, Flintkote Company, Pejepscot Paper Company, A. P. W. Paper Company, Veldown Company and others.
U. S. Dept. of Agriculture Forest Service, Southern Region, Atlanta.
State of Tennessee Forestry Division.
South Carolina State Commission of Forestry.
Forest Products Laboratory, Madison, Wis.
U. S. Dept. of Agriculture Forest Service, South Eastern Forest Experimental Station, Lake City, Florida.
University of Florida, School of Forestry.
Tennessee Valley Authority.
Atlantic Mutual Fire Insurance Company.
J. C. Penney Company.
Savannah Sugar Refinery Corporation.
Graphic Arts Exhibit "Southern Printing," presented in Gregory Hall by Southern Master Printers Federation and sponsored by Employing Printers Association of Savannah.
Philatelic Exhibition by Savannah Stamp Club. 40 Frames of U. S. and Foreign Stamps.
Photographic Exhibition sponsored by Camera Club of Savannah. A salon of outstanding photographs by amateurs in 21 Southeastern Cities.
Continuously, throughout the three days moving pictures were shown. Among these were the following: "Old Dixies Boom", "The Tree of Life", "Forest Fires or Game," "Fair Weather," "Trail of the Southern Pine," "March of Time," "Wonder World of Chemistry," "Flow," "Wire Weaving," "Felt Making."

Industrial Exhibits

At the De Soto Hotel there were interesting exhibits of machinery, chemicals and other materials. These were sponsored by the following companies: Beloit Iron Works, Freyn Engineering Co., Permutit

Co., Oliver United Fillers, Inc., Otto J. Goeppinger, Testing Machines, Inc., Warren Steam Pump, Phillip Carey Manufacturing Company, Jeffry Manufacturing Company, Pusey & Jones Corporation, Activated Alum Company, J. D. Robinson & Co., Lightner & Smith, De Zurik Shower Company, International Filter Company, Arthur H. Thomas, Condensor Service and Engineering Company, Improved Paper Machinery Company, Sandrik Saw and Tool Corporation, Crane Company, Sturtevant Mill Company.

Plant Visits

Organized visits were made to the Union Bag and Paper Mill, the Savannah Sugar Refinery, Southern Cotton Oil Company's plant and the Virginia-Carolina Fertilizer Works.

Social Events

In addition to the luncheons and banquets two major events attracted large attendance. The greatest of these, in so far as the general public was concerned was the Coronation Ball which was held in the City Market building, the only one large enough to accommodate such a sizable aggregation. As at the Mardi-Gras a king and queen held court and were attended by princesses and escorts designated by the governors of the twelve participating Southern States. Since the identity of the royal couple was maintained as a secret until the coronation event, there was much speculation rife as to who had been selected. The other great social event which terminated the three day festival was the bal masque, an affair of great splendor enhanced by the pulchritude of the Southern belles and the beautiful decorations which featured an old Colonial mansion. Everywhere were pine trees, branches and the native hanging moss. Music by Isham Jones orchestra added much to the social events participated in by the public.

To accommodate the thousands of participants, these events were held simultaneously at the DeSoto Hotel and the Citv Market place. Schools and business activities were suspended for two days to enable all to enjoy the multitude of events that were taking place. Adding to the glamour of the occasion were the presence of the cruiser Savannah and cutters Bibb and Tallapoosa. The crews had shore leave and were to be seen everywhere and the officers in their dress uniforms added much to the appearance of all social events. Open house was maintained daily on the ships and thousands inspected them. Boat races and drills by the ships' crews were reviewed and at the airport nationally known stunt fliers entertained the crowds.

Banquet and Luncheon Speakers

Addresses at the luncheons and banquets were made by Mayor Gamble of Savannah, D. C. Everest and Governors Maybank of South Carolina and Rivers of Georgia. Both Governors paid extensive tribute to the late Charles H. Herty and appealed for support of the Herty Foundation Laboratory and for further development of the industries of the South. Their incentive for doing this was very naturally based on social premises wherein the economy of the States would be improved through increased employment of people and the cultivation and utilization of natural resources.

The principal speaker at the main banquet was L. A. Hawkins, Executive Research Engineer of the General Electric Company who spoke on "Building for the Future." In this address Mr. Hawkins showed the relationship between pure science research and practical application of scientific principles.

Southern Pulp and Paper Club Meeting

There were several industrial conferences. These were sponsored by the Southern Paper Trade Association, the Southern Pulpwood Conservation Association and the Southern States Pulp and Paper Club. At the meeting of the latter four papers were presented. An opening address was made by R. G. Macdonald, Secretary of the Technical Association of the Pulp and Paper Industry, who extended the greetings of the national organization and told of the plans being made for the great fall convention of TAPPI to be held at Syracuse, N. Y. September 12-14, 1939. Rudolph Richter of the National Container Corporation presided as chairman of the meeting and Charles Carpenter of the Herty Foundation Laboratory led the discussion of the technical papers presented.

Address by I. H. Eldredge

I. F. Eldredge, Regional Director of the Forest Survey of the South, New Orleans, La., was the first speaker in the forestry symposium of the Pulp and Paper Club.

Most people, Captain Eldredge pointed out, have thought of the South as producing chiefly pine timber. Although it is true that 122 million acres (or nearly 58 per cent of the gross area of the South) is in forest land on which grows the largest pine forest in the world, it will be a surprise to most of us to learn that over half (51 per cent to be exact) of this land is occupied by hardwood forest types. While the Mississippi Delta Region, that extends southward from Cairo, Illinois through Arkansas, Kentucky, Tennessee, Mississippi and Louisiana, contains almost pure stands of hardwoods, throughout the entire South there are also many hardwoods interspersed among the pines. In fact, according to Captain Eldredge, the Survey has estimated that hardwoods make up nearly a billion cords, or about 63 per cent, of the nearly 1½ billion cords of usable material in standing timber in the lower South. In cull trees and tops alone—material that could be used for pulpwood, chemical wood, and similar purposes—there are over 300 million cords of material.

The big question proposed by Captain Eldredge is how to dispose of this huge volume of hardwood material. Evidently chemists and industrial engineers, especially paper chemists, should consider ways and means of developing useful products from it. Some of this material will inevitably be used for pulpwood but the satisfactory solution of this problem presents a genuine challenge to the inventive genius and ingenuity of Southern industrialists and technologists —a challenge that must be met if the South is to succeed in its problem of balancing agriculture with industry.

Pine Forest Management

The next speaker was Frank Heyward Jr., Manager of the Southern Pulpwood Conservation Association who talked on "Some Phases of Pine Forest Management for Pulpwood." In this address Mr. Heyward indicated that pulpwood is the lowest valued commodity derived from Southern pine forests. Only trees unsuited for producing products of higher value should be cut for pulpwood. On the other hand having a market for trees heretofore unmerchantable

for other forms of utilization is of great significance from the standpoint both of management and utilization. Moreover, since small trees now have a sale value, the public interest in forestry has attained a record peak. By integrating pulpwood production with the production of more valuable forms of forest products a management plan based on much closer and more complete utilization of Southern pine forests is now possible. The greatest problem is that of fire protection. Without greatly increased facilities for fire protection, forest management in the South can not be expected to make material progress in the future.

Pulpwood Procurement

The third speaker was Karl Swenning, Executive Vice President of the Southern Pulpwood Conservation Association who talked on "Problems of Pulpwood Procurement in the South." Mr. Swenning said in part: "Pulpwood procurement means the securing of required quantities of specification pulpwood over a long period of years at a cost that will permit the mill using that wood, to produce pulp or paper at a profit. First, there must be accurate knowledge of the quantities of available pulpwood within an economic operating radius of the plant, and also in areas beyond this radius. Second, the transportation facilities must be considered. Shall the wood be moved by rail, truck or barge? How does each relate to the timber supply available? Which permits the widest range of operation under various weather conditions? What is the ultimate cost of wood delivered to the plant by each facility? If the operation of barges is essential to meet the needs of the situation, how much can the mill profitably invest in the required equipment.

"Third, there is a need for building a permanent, dependable, field organization which will produce the required volume of wood in accordance with instructions issued. Fourth, in the procurement problem is that dealing with the conservation program of the industry and public relations. It is the most difficult problem of all since it requires contact with the men from whom wood is purchased, timberland owners, persons in competitive forest products industries as well as with the general public, their agencies and the press."

Water Conditioning

In addition to the three forestry papers was one by Eskell Nordell of the Permutit Company, New York, who talked on "Conditioning Water for the Paper Mill." Mr. Nordell discussed natural water supplies, the treatment of water by sedimentation, coagulation, settling, filtering and softening. Particular attention was given to the use of zeolites and the removal of iron, manganese and hydrogen sulphide. Mention was made of the new sea-water regenerating plant of the Rayonier Corporation mill at Fernandina, Fla., where ten million gallons of sea water will daily be regenerated for use in pulp manufacture.

Those Who Attended

Those in attendance included the following:

A. B. Clark and S. W. Fletcher, J. O. Ross Engineering Corp., New York, N. Y.; C. H. Schaeffer, Asst. State Forester, Columbia, S. C; F. H. Brown, A. F. T. M., Southern Ry., Atlanta, Ga.; Sam P. Robinson, Brunswick Pulp and Paper Company, Brunswick, Ga.; V. S. Denison, Beloit Iron Works, Beloit, Wis.; Edw. D. McKellar, General Electric Company, Atlanta, Ga.; A. V. Kennedy, U. S. Operator; C. L. Knowles, The Dorr Company, Inc., New York, N. Y.; John Cornell, *The Paper Mill* New York, N. Y.; W. J. Damtoft, and Wm. A. Cash, Champion Paper & Fibre Co., Canton, N. C.; E. J. Downey, Champion Paper & Fibre Co., Houston, Texas; Phil A. Howard, *American Paper Merchant,* Chicago, Ill.; John M. Rittelmeyer, Atlanta, Ga.; W. E. Penfield, Gulf States Paper Corporation, Tuscaloosa, Ala.; R. H. Koster, Mexican Pet. Corporation, Savannah, Ga.; M. Blankfield, Mexican Pet. Corporation, Savannah, Ga.; Arthur E. Cabble, Wm. Cabble Company, Brooklyn, N. Y.; Dr. Harold Bunger, Georgia Tech., Atlanta, Ga.; J. G. Carlisle, Transportation; A. H. Chamberlain, National Paper Trade Association, New York, N. Y.; Geo. Chisholm and M. Derrico, Union Bag & Paper Corp., New York, N. Y.; John H. Leo, Brown Company, New York, N. Y.; C. E. Dobson, Southern Paper Trade Association, New Orleans, La.; Condenser Service and Engineering Company, Inc., Hoboken, N. J.; H. C. Roak, Arthur H. Thomas Company, Savannah, Ga.

David De Zurik DeZurik Shower Company, Sartell, Minn.; M. H. Courtenay, S K F Industries, Inc., T. L. Elliott, Atlanta Paper Company, Athens, Ga.; I. F. Eldredge, U. S. Forest Service, New Orleans, La.; Willis J. Davis, Lucas & Jenkins, Inc., Atlanta, Ga.; A. D. Cleveland, E. C. Palmer & Co., New Orleans, La.; B. R. Colby, Standard Oil Company, Atlanta, Ga.; G. W. Nicholson, Panama City, Fla.; Warren Lewis, Longview-Saginay Lime Works Company, Birmingham, Ala.; A. W. Foley, Chemicals, Charlotte, N. C.; A. A. Clark, Standard Oil Company, Savannah, Ga.; Clint Davis, U. S. Forest Service, Atlanta, Ga.; Buel D. Dean, Union Bag and Paper Corporation, Savannah, Ga.; K. A. Swenning, Southern Pulpwood Conservation Association, Chillicothe, Ohio; Elizabeth Stephens, Princeton, Ky.; Troy Tibbs, Jacksonville, Fla.; Mrs. J. J. Tibbs, Jacksonville, Fla.; C. F. Evans and J. C. Kircher, U. S. Forest Service, Atlanta, Ga.; J. L. Philips, A. C. L. RR. Company, Thomasville, Ga.; C. W. Philips, Phoenix Mutual Life Insurance Company, Dublin, Ga.; S. C. Roberts, Seaboard Air Line Ry., Norfolk. Va.; Wm. Beekman Huger, Champion Paper and Fibre Company, Savannah, Ga.; E. C. Boyette, Philip Carey Company, Charlotte, N. C.; Wm. P. Gruendler, Spredders Refiners, St. Louis, Mo.; A. H. French, American Cyanamid and Chemical Corporation, Valdosta, Ga.; M. L. Wuescher, Jr., Gaylord Container Corporation; J. L. Elrod, General Electric Company, Charleston, S. C.; W. C. Strickland, Strickland Paper Company, Inc., Birmingham, Ala.; W. B. Sullivan, Lebanon, Pa.; E. A. Sterling, Johns-Manville Company, Montrose, Pa.

Mr. and Mrs. A. P. Sullivan, Union Bag and Paper Corporation, Savannah, Ga.; H. M. Tull, Lily Tulip Company, Atlanta, Ga.; J. B. Venturini, Brooklyn, N. Y.; Mrs. Mary Wagoner, Fulton Paper Company, Atlanta, Ga.; D. J. Weddell, Acting Director Division of Forestry, Atlanta, Ga.; W. R. White, Jr., International Paper Company, New York, N. Y.; M. S. Flint, Aqua-Sec. Corporation, New York, N. Y.; J. M. H. Fitzgerald, Epes-Fitzgerald Paper Company, Columbia. S. C.; Albert Ernest, Union Bag and Paper Corporation, Savannah, Ga.; H. A. Wilmerding, Jr., Corn Products Sales Company, New York, N. Y.; Vernon Woodside, Mathieson Alkali Works, New York, N. Y.; T. Guy Woolford, Georgia Fores-

try Association, Atlanta, Ga.; George Witham, Ciba Company, Charlotte, N. C.; R. W. Wirt, Southern Railway System, Washington, D. C.; Mrs. O. D. Hooper, Eufaula, Ala.; A. J. Kroog, General Electric Company, Atlanta, Ga.; H. V. Hart, St. Regis Paper Company, Montreal, P. Q.; T. W. Earle, North Carolina Pulp Company, Plymouth, N. C.; J. B. Bishop, Mississippi Forest Company, Jackson, Miss.; H. H. Golson, Wetumpha Printing Company, Wetumpha, Ala.; Otto J. Goeppinger, Paper Mill Equipment, New York, N. Y.; C. Fuhrmeister, Oliver United Filters, Inc., New York, N. Y.; M. R. Forman, Pulp, Paper, Bags, Baltimore, Md.; A. V. Gruber, Condenser Service and Engineering Company, Hoboken, N. J.; Mrs. H. H. Golson, Wetumpha Printing Company, Wetumpha, Ala.; Roger G. Brown, The Dorr Company, Inc., Atlanta, Ga.; Jas. M. Kahn, International Filter Company, Atlanta, Ga.; H. Bradley Johnson, Union Bag and Paper Corporation, Savannah, Ga.

R. S. Johnston, Pusey & Jones Corporation, Wilmington, Del.; F. T. Jamison, Interstate Cordage and Paper Company, Pittsburgh, Pa.; Mr. and Mrs. T. Ireland, Crane Company, Chicago, Ill.; Lawrence Manning, Atlanta, Ga.; Charles A. Labor, Champion Paper and Fibre Company, Philadelphia, Pa.; Howard A. Lovejoy, Jr., General Chemical Company; J. E. Lacewood, Georgia Forestry Association, Savannah, Ga.; Darwin E. Leland, Southern Tissue Mills, Inc., Rockingham, N. C.; B. J. Larpenteur, The Dorr Company, Atlanta, Ga.; Sam R. Lynch, Savannah, Ga.; O. T. Martin, Fieldown Company Dir. International Paper Company; H. J. Hulin, Mexican Metroleum Company, Savannah, Ga.; C. H. Hubbard, Lily Cups, Larchmont, N. Y.; Phil A. Howard, *American Paper Merchant,* Chicago, Ill.; D. C. Holland, General Chemical Company, F. M. Hawes, Armstrong Junior College, Savannah, Georgia; Mr. and Mrs. W. H. Wardlow, Lebanon, Pa.; Samuel M. Bratton, Pusey Jones Corporation, Wilmington, N. C.; Chris. Larsen, New York, N. Y.; E. M. Morrell, *Manufacturers Record,* Baltimore, Md.; J. H. Saile, Savannah, Ga.; W. H. Morgan, Jr., Hartsville, S. C.; J. H. Moar, Brunswick Pulp and Paper Company, Brunswick, Ga.; J. H. Allen, Southern Pulpwood Conservation Association, Savannah, Ga.; D. C. Everest, American Pulp and Paper Association; F. T. Jamison, National Paper Trade Association; W. C. Strickland, Southern Paper Trade Association; D. G. Moon, Southern States Pulp and Paper Club, Savannah, Ga.

L. A. Hawkins, General Electric Company, Schenectady, N. Y.; Capt. Henry Coyle, U.S.C.G.C. "Bibb,"; Capt. Robt. C. Giffen, U. S. S. Cruiser "Savannah,"; A. S. Boyer, Jr., Union Bag and Paper Company, Savannah, Ga.; Harry G. Blaising, Philips Carey Company, Charlotte, N. C.; W. R. Barnard, W. R. Barnard Paper Company, Ottawa, Canada; Wm. D. Comings, West Virginia Pulp and Paper Company, New York, N. Y.; H. E. Brinckerhoff, American Pulpwood Association, New York, N. Y.; M. S. Flint, Aqua-Sec. Corporation, New York, N. Y.; G. E. Allen, S. K. F. Industries, Inc.; W. H. Atkinson, W. H. Atkinson, Fine Paper Montgomery, Ala.; Mrs. David Atkinson, Savannah, Ga.; D. J. Czarnecki, Union Bag and Paper Corporation, Savannah, Ga.; David Atkinson, Savannah, Ga.; Geo. W. Baan, Veldown Company, Inc., Charlotte, N. C.; W. H. Barnwell, Georgia Power Company, Atlanta, Ga.; John R. Aust, Jr., The Champion Paper and Fibre Company, St. Louis, Mo.; Wm. B. McGoldrick, Price & Pierce, Ltd., New York, N. Y.; C. E. Smith, The Champion Paper and Fibre Company, Canton, N. C.; W. M. Benzing, The Champion Paper and Fibre Company, Asheville, N. C.; Winifred Strickland, Birmingham, Ala.; J. P. Strasser, Stein, Hall & Co., Chicago, Ill.; Mrs. W. C. Strickland, Birmingham, Ala.; Fred E. Stuart, Activated Alum Corporation, Baltimore, Md.; R. H. Spessard, American Pulpwood Association, Richmond, Va.; W. S. Storer, Southern Forest Experiment Station, New Orleans, La.

Mr. and Mrs. R. H. Stevens, Chatham Processes Company, Savannah, Ga.; M. K. Stern, Paper Broker, Tampa, Fla.; Mr. and Mrs. John B. Spivey, Georgia State Senate, Swainsboro, Ga.; V. H. Sonderegge, La. Dept. of Conservation, New Orleans, La.; G. K. Singletary, Brunswick Pulp and Paper Company, Brunswick, Ga.; Francis C. Smith, *Southern Power Journal,* Atlanta, Ga.; J. C. Shutze, Atlanta Paper Company, Atlanta, Ga.; Daniel J. Saunders, The Permutit Company, New York, N. Y.; E. L. Shuff, Bartlett-Hayward, Atlanta, Ga.; Mr. and Mrs. Robt. B. Roach, Roach Paper Company, Little Rock, Ark.; John D. Robinson, J. D. Robinson Company, Savannah, Ga.; Chas. E. Richheimer, Consulting Engineer, Jacksonville, Fla.; Mr. and Mrs. R. C. Richter, National Container Corporation, Jacksonville, Fla.; W. Frank Richards, Atlanta Master Printers Club, Atlanta, Ga.; A. W. Rhodes and W. A. Rhodes, S. P. Richards Paper Company, Atlanta, Ga.; R. H. Mullen, Gaylord Container Company, St. Louis, Mo.; E. M. Murray, Mathieson Alkali Works, Charlotte, N. C.; Mr. and Mrs. John H. Milane, National Container Company; R. W. Murray, National Tube Company, Atlanta, Ga.; John H. Noble, Improved Paper Machine Company, Pelham, N. Y.; Mr. and Mrs. Frank H. Parke, Democrat Printing and Lithographing Company, Little Rock, Ark.; E. B. Patterson, Arthur H. Thomas Company, Savannah, Ga.; Miss A. F. Powell, A. F. Powell Company, Anniston, Ala.; Paul Prather, Lily Tulip Cup Corporation, Atlanta, Ga.; Mr. Hugh Peterson, Congressman—State of Georgia, Ailey, Ga.

R. H. Laftman and Samuel Kipnis, National Container Corp., Jacksonville, Fla.; Alexander Thomson, Jr., The Champion Paper and Fibre Company, Hamilton, Ohio; Ernest R. Behrend, Hammermill Paper Company, Erie, Pa.; J. Kipnis, National Container Corporation, Jacksonville, Fla.; C. Carpenter, Herty Foundation Laboratory, Savannah, Ga.; Walter Savell, Mathieson-Alkali Works, New York, N. Y.; R. G. Macdonald, Technical Association Pulp and Paper Industry, New York, N. Y.; J. Kahn, International Filter Company, Atlanta, Ga.; E. Nordell, Permutit Company, New York, N. Y.; H. A. Murchison, Permutit Company, Jacksonville, Fla.; T. Saunders, Permutit Company, New York, N. Y.; Mrs. V. S. Denison, Sandusky, Ohio; Miss Ruth Denison, Sandusky, Ohio; Mrs. C. Fuhrmeister, Oliver United Filters, New York, N. Y.; Edward R. Gay, St. Regis Paper Company, New York, N. Y.; Earl A. Southan, Lindsay Wire Weaving Company, Cleveland, Ohio; H. A. Morrison, Oliver United Filters, Inc., New York, N. Y.; E. George Butler, Industrial Committee, Savannah, Ga.

Murray & Flood, Inc. to Move

Murray & Flood, Inc., consulting engineers, announce the removal of their offices to 7 Dey street, New York, effective on April 25.

Midwest Prospects Good Despite War Crisis

Paper Market In Chicago Less Active As Retail Demand Falls Off But Sales of Many Grades of Paper Continue In Good Volume and Outlook Is Favorable — New EmploymentPeace Bill Introduced—Other News.

[FROM OUR REGULAR CORRESPONDENT]

CHICAGO, Ill., April 24, 1939—Conditions remained comparatively quiet in the Chicago paper market during the past week. Kraft continued to be firm with the demand reported as steady and the undertone in excellent shape. Sulphites, after a somewhat shaky position a short time ago, have resumed a more active and firm tone according to local reports. The book paper market is not as well supported as a short time ago with demand continuing fairly good and prospects said to be bright for betterment here. Covers could be described as in somewhat the same position. Groundwoods were in good demand with the mills fairly active and the market firm while the newsprint situation was also said to be comparatively favorable. Retail demand continued to be more dull than expected and buyers in all lines seemed hesitant about fulfilling commitments, reflecting the war scarce and the general reaction in the business picture. Waste papers continued firm with demand reported good and the outlook favorable for a continued broadening out of activity.

Blandin Opens New Sales Office

Frank Foley, widely known in the paper trade, will have charge of the new Chicago sales office of the Blandin Paper Company which has been opened at 111 W. Washington Street, room 1444. The company, with mills at Grand Rapids, Minnesota, manufactures newsprint and groundwood specialties.

Midwest SAPI Announces Golf Outings

The Salesmen's Association of the Paper Industry, midwest division, has announced the first of its summer golf outings to be held at the Sunset Ridge Country Club on Friday, May 26. According to golf chairman, George Crafts, the initial outing will be on a par with others held in past years and every effort will be made to introduce the series of five outings in a "bang-up" way. The complete golf and outing schedule will be announced within a short time and after arrangements with various outstanding country clubs in the district have been completed.

Illinois Gets "Employment Peace Bill"

The Illinois Legislature this week received the Illinois "Employment Peace Bill," introduced by Senator Lantz and similar to the Oregon and Wisconsin laws designed to eliminate racketeering from the labor picture. Senator Lantz reported the measure as being introduced at the behest of agriculture as a means of promoting industrial peace and of insuring a steady market for farm products. Illinois employer groups, beginning to feel the full force of racketeering element activity in various Illinois cities, including Chicago, are also interested in the proposal which sets up a three man Board which provides that no picketing or sympathetic striking can be engaged in unless there is an actual labor dispute between the employer and the majority of his employees. The bill also provides that ten days must elapse before a called strike can go into effect. That the bill has the interests of agriculture behind it, is indicated by the fact that Senator Lantz is a strong member of the agricultural bloc and that the measure itself has been referred to the Illinois Senate Committee on Agriculture. It has, of course, immediate interest to the paper industry anxious not only for industrial peace in its own ranks but also to insure an improvement in general business conditions in this State. The measure, S. B. 297, will be heard by the Senate Committee on April 19 and its passage pressed.

The Legislature now has before it the complete labor set-up in the anti-injunction proposal, the Industrial Peace bill, a Baby Wagner Act, anti-spy measure and the important "model" wage-hour proposal introduced by Representatives O'Neill and Lawler.

New Wet-Strength Paper Attracts Interest

The Chicago paper industry is showing a great deal of interest in a new product manufactured by the Brown Company and being marketed by the Kalamazoo Vegetable Parchment Company, the Paterson Parchment Paper Company and the Brown interests as well. The new wet strength paper is known as Aqualized Paper, the result of a new process that gives wet strength to paper so that it may be water soaked but still retain a major degree of its original strength. Inquiries are coming from those dealing in paper for produce wrapping, meat packing, crate lining, twisting for industrial use and from many other sources.

Variety of New Lines Appear

A summarization of recent mailings from the various paper houses shows a wide variation of new lines taken on by local concerns. Included in the list are International Duplex, made by the Chemical Paper Manufacturing Company, Moistrite Bond, a Mead Sales product and Strathmore Text, Cover and Fairfield all by the James White Paper Company. Birkshire Papers are also featuring Corroflex, made by the Sherman Paper Products Company and Entry Ledger from the mills of the Gilbert Paper Company. Bermingham & Prosser have added Valley Offset, made by the Sorg Paper Company; Acadian Bristol, by the Beveridge Paper Company and B P F Pt card from the Wheelwright Paper mills.

The Whitaker Paper Company mailed out new price sheets showing revisions in the book paper price listings and the addition of Trojan Laid Bond, Wausau Mimeo Bond and Penguin and Cordovan Document as new lines. The page devoted to a discussion of Whitaker personnel lists a total of 22 sales representatives in this area.

Committees at Work on New Abitibi Plans

Variety of New Proposals For Rehabilitation and Disposal of Abitibi Power & Paper Co. Appear and General Creditors Plan To Be Represented In Negotiations—To Cut 300,000 Tons of Pulpwood—Other News.

[FROM OUR REGULAR CORRESPONDENT]

TORONTO, Ont., April 24, 1939—Affairs in the Abitibi Power & Paper Company, Limited, which have been engaging the attention of the pulp and paper arena for some time, are still a matter of much contention. New proposals are being presented constantly. There are several committees at work all presenting different plans for a solution of the financial difficulties of the company and ways and means of protecting vested interests. The latest development is a letter sent to over seven hundred creditors holding claims totaling $694,236 by Clement Tremblay, chairman of the general trade creditors' committee. The letter points out the necessity for close cooperation by all creditors in order to safeguard their claims.

Two informal meetings were held in March for the purpose of considering what action might be taken by such creditors to preserve their claims in the event of a forced sale of the assets, or in the event of the presentation of any scheme of reorganization which made no adequate provision for the payment of general trade claims. A protective committee was appointed to represent such creditors in negotiations which were expected to arise through an effort to compromise the claims of bondholders and preferred and common shareholders. The letter goes on to point out that subsequent to these meetings of creditors as was anticipated the bondholders' protective committee announced a scheme which contemplated a forced sale of the assets of the company and which made no cash provision for the unsecured creditors, and which in effect would probably represent a total loss to such creditors.

General Creditors to Present Claims

The bondholders' plan was not submitted directly or indirectly for the consideration of the unsecured creditors before it was made public. The general trade creditors committee have taken legal advice and are now proceeding with the requisite documents to enable adequate representation in negotiations. It is stated that the members of the committee have consulted with the defensive bondholders' committee and preferred and common shareholders' committees and they have indicated that they are willing to cooperate.

Would Investigate Government Pulpwood Deals

The Opposition in the Ontario Legislature are calling for the appointment of a special committee to investigate dealings of the government with big pulp and timber companies. The members want to be informed regarding the relations of the government with such companies as the Lake Sulphite Pulp Company, the Abitibi Power & Paper Company and the Pulpwood Supply Company. The Lake Sulphite Pulp Company was granted large areas of valuable timber but before the plant reached production, it went into liquidation. The Abitibi Co. has been in liquidation for upwards of seven years and the government has been in the "picture" at every attempt at reorganization. In the case of the Pulpwood Supply Co. it is alleged the Ontario government constructed expensive works to provide a water course to Lake Superior from Little Long Lac in anticipation of a mill which was never completed. Premier Hepburn has consented to appoint a committee to inquire fully into all matters brought up for investigation.

Niblock to Head New Midwest Branch

James Niblock, of Port Arthur, has been appointed manager of the new branch of Mid-West Paper Sales, Limited, at Fort William which makes the sixth branch of the company opened in Western Canada. Mr. Niblock represented his company in the western territory for a number of years before his transfer to Port Arthur in 1938. He has been succeeded in Port Arthur by Robert Wheatley.

Hon. Norman Rogers, Minister of Labor, Ottawa, announced in the House of Commons, Ottawa, that the federal government will spend one million dollars in a forestry program as an expansion of the youth training program of the administration. The government hopes to provide work for four thousand men in cooperation with the provinces. While the program sets down one million dollars, considerably more than this sum may be expended. Of the one million dollars available, six hundred thousand dollars is to be allocated to the provinces on a dollar-for-dollar basis for forest conservation work. The remaining four hundred thousand will be used for forest conservation work on the National Parks of Canada and forest experiment stations under the direct supervision of the Dominion Forest Service as a part of a youth training program.

Don Valley Production and Sales Good

The reports for the past year presented at the annual meeting of the Don Valley Paper Company, Limited, Toronto, showed that the output and sales had been very satisfactory although not as large as in the previous year. Several improvements were made to the plant. N. E. Wainwright was re-elected president, R. H. Joyce, vice president, and A. B. Mortimer, secy.-treas.; R. I. Finlay, Toronto and A. P. Jewett, Toronto, directors. Business for the coming season is regarded as fairly promising.

Will Cut 300,000 Tons of Peeled Pulpwood

It is believed that upwards of 300,000 cords of peeled pulpwood will be cut in the Thunder Bay district of Ontario during the coming summer for shipments to the United States. It is thought the crop of peeled wood will almost equal in cordage that taken out in 1936. One contractor has contracts for more than 30,000 cords and a leading Toronto firm will enter into contracts for 60,000 cords or more.

Canada Imposes Fixed Value on Wood Pulp

Restriction Placed On Pulp From European Countries By Dominion Government To Prevent Dumping — Consolidated Paper Corp. Issues First Employees Annual Report—Port Royal Mill To Reopen—Other News.

[FROM OUR REGULAR CORRESPONDENT]

MONTREAL, Que., April 24, 1939—The Dominion Government has imposed a fixed value for duty purposes on paper pulp from European countries, the object being to prevent dumping. The restriction applies to all five grades of pulp including kraft. Under the terms of the U. S.-Canada Trade treaty Canada lifted the duty on United States pulp, and this created apprehension in the minds of Canadian producers that Baltic pulp would come into Canada at low prices under the most-favored-nation clause. The new ruling follows:

Canada Fixes Valuation on Imports

Effective April 13th, 1939, the Department of National Revenue, Ottawa, Canada, has made effective the following minimum values, in Canadian Funds, for entry purposes, on woodpulp of European origin, per ton of 2,000 lbs. air dry weight f.o.b. point of production:

Unbleached Sulphate (Kraft) Woodpulp	$36.00
Bleached Sulphate (Kraft) Woodpulp	50.00
Unbleached Sulphite Woodpulp	36.00
Bleached Sulphite Woodpulp	46.00
Bleached Soda Woodpulp	46.00

When shipments move to Canada from an intermediate point, all charges from point of production are to be added in determining values for entry purposes. Any woodpulp shipped on consignment without sale prior to shipment will be subject to the same regulations. If the sales value of Woodpulp imported is below the minimum values that have been set, such importations will be subject to dumping duties equal to the difference between the selling price and the minimum values for import that have been established. It is to be noted that these regulations do not apply to woodpulp of United States origin.

Consolidated Reports to Employees

Following a precedent established by a number of important American companies, Consolidated Paper Corporation, Montreal—one of the largest newsprint manufacturing concerns in Canada—has just published its first "annual report to employees," covering the fiscal year ended December 31st. The president, L. J. Belnap, in presenting the report, says: "It is one of my jobs, as an employee and president of our Company, to make a report every year to shareholders. This report was rather formal and it is thought that it would be of help to some, to better understand the affairs of the Company, if a report was presented in a somewhat different form, so there is being submitted this edition of the annual report which might well be called the "Annual Report to Employees."

In the report, the profit and loss account, instead of having the usual "income from operations" and "income from other sources," refers to receipts from "sales of manufactured products" and "stumpage sales, profits on exchange," etc., etc. Then, in showing deductions, the report says "The above money received was spent for:" and deductions stated in simple everyday terms. For instance, depreciation write-off is referred to as "reserved to replace plant and equipment as it becomes worn out or obsolete, of which $2,174,215 has been spent for making additions and improvements to plant and equipment." The receipts and expenditure account covers a period of 7 years from January 1st, 1932.

Instead of surplus for the year, the report refers to "payment to owners (of which there are more than 20,000) for the use of machinery, buildings, land, inventories, etc., without which no employment could be given to thousands of workers." Against this item the deduction is "nothing."

Taxes 26 Per Cent of Payroll

A significant feature of the income account is that taxes of all kinds for the 7-years under review were paid to a total of $9,254,997, or 26% of the corporation's total payroll for the period of $35,479,351. Put in another way, wages and salaries absorbed 35.04% of total receipts for the 7 years while taxes absorbed 9.14%.

Balance sheet figures are presented in a form quite as explanatory, assets being referred to as "what we have" and liabilities as "what we owe," with simple explanations for each of the various items.

In reviewing the figures president Belnap says: "This seven year statement hardly requires further explanation. It does show, however, quite clearly, that we have not fulfilled one of our responsibilities mentioned before, viz., to the owners as we have not paid them anything (money) for the use of their mills, machinery, etc.

New Product for Donnacona Paper

Announcement is made by Alexander Murray & Company, Limited, distributors of Donnacona insulating products, of the final confirmation of rights to manufacture acoustical products under the Acousti-Celotex Patents. Alexander Murray & Co., Ltd., is an operating subsidiary of Dominion Tar & Chemical Co., Ltd.

At the Donnacona Paper Company's mill, located in Donnacona, Quebec, the machines to manufacture Donn-Acoustic are now being installed.

Port Royal Mill to Reopen

It is expected that the sulphite pulp mill at Fairville, N. B., which has long been idle, will be brought into operation in the near future. The mill belongs to the Port Royal Pulp and Paper Company, Limited. It has five digesters and two dry machines, with a capacity of 250,000 lbs. of bleached sulphite fiber per 24 hours. After long negotiation an agreement has been reached between the Province of New Brunswick, Saint John County, and Lancaster Parish to guarantee a $200,000 bond issue to finance the reopening of the mill. Of the amount, the Province will guarantee $100,000, the county $60,000, and the parish $40,000.

Wisconsin Paper Industry on Upward Trend

Reports By Industrial Commission Indicate Slight Improvement In Pulp and Paper Mills With 14,205 Workers and 4.6 Per Cent Gain In Payrolls—Sale of Oconto Mill Temporarily Halted—Other Late Mill News.

[FROM OUR REGULAR CORRESPONDENT]

APPLETON, Wis., April 24, 1939—Employment in the paper and converting plants in Wisconsin continues to show an upward trend, indicating a slight improvement in business, according to reports issued by the Wisconsin Industrial Commission.

In February, 92 plants reported 16,979 workers on their payrolls, a gain of 1.1 per cent over January. Payrolls were $429,701 per week, a gain of 4.5 per cent. The average amount earned per worker in February was $25.68, the number of hours worked per week averaged 42.2, and the average hourly wage was 60.8 cents.

Paper and pulp mills, with 14,205 workers, showed a gain of one per cent over January, and a gain of 4.6 per cent in payrolls. Paper box plants, with 1,337 workers showed an increase of 0.2 per cent in number employed, and 1.4 per cent in payrolls. Paper products plants, employing 1,437 workers, recorded a gain of 2.8 per cent, and payroll gains of 7.2 per cent.

The average gain for all industries in Wisconsin was 2.6 per cent in February over January, with an increase of 7.7 per cent in payrolls.

Rebuilding of Old Patten To Continue

Rebuilding the former Patten Paper Company mill at Kaukauna, Wis., into a hydro-electric plant furnishing power to the municipal utility will proceed unhampered, following a denial last week by the Wisconsin Public Service Commission of setting aside orders previously granted to go ahead with the project. An organization known as the Citizens' Protective League had protested a deal made by the city with the Green Bay and Mississippi Canal Company, whereby certain lands and flowage rights were exchanged by the power company with the city in order to give the new plant 100 per cent flowage rights of the Fox River.

The commission ruled the league had entered no reasonable grounds to demand that the original order of approval be vacated. It also denied the transaction granted a power monopoly to the canal company, and that the city would lose tax revenues by acquiring lands, since these should still be paid by the municipal utility. The commission also pointed out the new agreement with the canal company would permit the city to develop a greater power output with a head of water five feet less than under its former plan.

Work has been started on the damsite, and the hydro-electric plant will be completed within two years. The total cost is estimated at $408,000.

Sale of Oconto Falls Mills Halted

Efforts to force a sheriff's sale of properties of the Oconto Falls Pulp and Paper Company, Oconto Falls, Wis. were halted temporarily last week when the company petitioned Circuit Judge Arnold F. Murphy of Marinette, Wis., to postpone the sale or vacate the judgments. There are liens against the property totalling $14,000 due contractors and supply companies for alterations made at the mill. Hearing on the petition for postponement was scheduled for April 22. The company owns valuable water power rights on the Oconto River.

Safety Conference Scheduled for June 8

The ninth annual Wisconsin River Valley Safety Conference will be held at Wausau, Wis. June 8, according to plans made by the committee chairmen at a meeting at Wausau last week. Speakers at the paper and pulp section will be Ray Richards, Wisconsin Rapids, Wis., whose subject will be "The Employes' Part in the Safety Program," and Dr. Otis Wilson, Wausau, Wis., on "Eye Hazards and their Prevention." There is to be panel discussion at the general session on "The Accident-Prone Employee," with E. D. Stoetzel as chairman.

Safety Activity at Kimberly-Clark Mill

Safety activity at the Kimberly-Clark Corporation's mill at Kimberly, Wis., is being stimulated by a new contest. The mill departments have been divided into eight groups named as big league baseball teams, and they will compete for a no-accident record over a period of six months. An hourly paid employee of the winning team will be selected to attend the National Safety Congress at Atlantic City, N. J. October 16 to 20 with expenses paid, in case the mill wins a general contest among all Kimberly-Clark mills, including those at Neenah and Niagara, Wis., and Niagara Falls, N. Y. The mill winning the inter-mill contest will be permitted to send its manager, one salaried employee and one hourly paid employee at the company's expense. The mill winning second place will be allowed to send two representatives.

Rail Coal Freight Rates Reduced

Coal freight rate reductions recently authorized in the state by the Wisconsin Railroad Commission on railroad shipments within the state will go into effect May 1. The commission last week denied a rehearing to the railroads affected. The savings will amount to $250,000 per year of which the paper mills and power plants as the largest users will benefit the most.

Barge shipments of coal from Green Bay, Wis. to paper mills of the Fox River Valley were resumed last week by the Fox River Navigation Company, with the opening of navigation for the season.

Cola Parker Named Committee Member

Cola G. Parker, vice-president of Kimberly-Clark Corporation, Neenah, Wis., has been named a member of the committee on government finance of the National Association of Manufacturers with headquarters at New York City, according to announcement of Howard Coonley, association president. He

will assist in preparing a report for submission to N. A. M.'s Congress of American Industry in December.

C. E. Saecker Elected to Chamber of Commerce

Carleton E. Saecker, secretary of the Appleton Machine Company, Appleton, Wis., was elected first vice-president of the Appleton Chamber of Commerce at its annual meeting last week. The retiring president of the chamber is R. H. Purdy, general manager of the Tuttle Press Company.

Thilmany Completes 136 Day Safety Period

What is known as the upper mill of the Thilmany Pulp and Paper Company, Kaukauna, Wis., has completed 136 days without a lost-time accident, and the lower mill 70 days, according to L. C. Smith, personnel director. A monthly prize of $10 is given and was won in April by John Diedrick.

To Plant 21 Million Spruce and Pine Trees

Plantings of white, Norway and jack pine and white and Norway spruce on state and county owned forest lands will total 21,000,000 trees this spring, according to C. L. Harrington, superintendent of forests and parks for the Wisconsin Conservation Commission. These have all been grown in state nurseries at Wisconsin Rapids, Trout Lake and Gordon, and averages 6 to 12 inches in height. Most of the work will be done by boys in the CCC camps, except where counties employ WPA crews or direct workers. The total plantings will surpass by millions any previous year.

Bernard-Kugel Nuptials

Robert F. Bernard, technical engineer for Kimberly-Clark Corporation, Neenah, Wis., and Miss Emily Kugel of Neenah, were married last week at St. Patrick church by the Rev. Abner S. Laque. Their honeymoon trip is taking them to the east, and they will be at home after May 1 at 121 Fourth St., Neenah.

"Entre Nous" Issue in New England

BOSTON, Mass., April 17, 1939—*Entre Nous*, published by the New England Paper Merchants Association, Inc., with Miss A. Atwood, office secretary of the organization as efficient editor, has made its bow, with Number 1 as the April issue. The purpose of the paper is "to bring items of interest, both of a business and a personal nature, to our members and others."

By its publication, two infants are introduced, Miss Deborah Brewer, the small, but winning daughter of the association's new president, John H. Brewer, and "Entre Nous" itself. The issue contains the names of officers and directors of the association, a note of the activities of President Brewer, in addition to his work in the paper industry, and a picture of his daughter.

Among other interesting features are an article by F. Bendel Tracy in regard to the Boston Paper Trade Association, the legislative situation in the New England States, a column or so of personals and some items in the lighter vein.

The publication consists of four pages, 6x9¼. The issue is printed on 80 lb. Fawn Spectrum Colored Coated supplied with the compliments of Storrs & Bement Company.

C. A. Gillett Appointed Forester

The appointment of Charles A. Gillett as Industrial Forester of the Seaboard Air Line Railway, succeeding A. E. Wackerman, resigned, was announced today by Warren T. White, General Industrial Agent.

Mr. Wackerman has accepted a position with the School of Forestry, Duke University, at Durham, N. C. Mr. Gillett, who assumes his duties April 20, will make his headquarters at Norfolk.

Mr. Gillett's appointment is in furtherance of the forestry program inaugurated by the Seaboard approximately two years ago, and which has as its principal purpose promotion of sound forestry practice to the end that a continuing supply of timber may be available for saw mills, pulp and paper plants, and other timber using industries in the territory. Since 1935 eleven large pulp and paper mills have located in the six states served by the Seaboard Railway. The demand created by the pulp and paper mills, when added to that of other timber using industries, amounts to an enormous volume and, in the aggregate, constitutes a very large drain upon the forests of the area.

Born in Auburn, N. Y., Mr. Gillett was graduated from Cornell University. He holds Bachelor of Science and Master of Forestry degrees from that institution and, in addition, has almost completed the necessary work to secure a Ph. D. After finishing his forestry work at Cornell, Mr. Gillett held successive positions of importance in forestry work at the U. S. Great Plains Experiment Station, Mandan, North Dakota; Extension Forester, North Dakota, Bottineau, North Dakota; Assistant Extension Forester, Cornell University, Ithaca, N. Y.; Extension Forester, State of Arkansas, Little Rock, Ark.; State Forester, State of Arkansas, and Collaborator U. S. Forest Service, Little Rock, Ark. He held the latter position for the past six years.

He is a Senior Member, Society of American Foresters, and a member of the standing committee on "State Forestry Organizations." He was formerly chairman of the Ozark Section of the Society of American Foresters, former Secretary of the Association of State Foresters and is a member of various state and federal boards and committees. In its program of lending assistance to land owners and wood using industries the Seaboard is continuing the progressive policy which it has followed for years in rendering the greatest possible service to patrons in its territory.

Virginia Paper Co. Buys Building

[FROM OUR REGULAR CORRESPONDENT]

JACKSONVILLE, Fla., April 24, 1939—Stuart H. Richeson, vice president of the Virginia Paper Company, announces the purchase of a two-story brick building and adjoining lot on the north side of Eighth Street, between the railroad and Ionia Street. It will be the permanent home of the company. The building has exceptional loading and parking facilities and has its own railway siding.

"Our decision to buy was prompted by our faith in Jacksonville and the future of Florida," Mr. Richeson said. "We are one of the few paper houses to own our warehouse, which will be remodeled to suit our needs."

The company is celebrating its silver anniversary this year. It serves printers, publishers and stationers of Florida and Georgia.

Financial News of Pulp and Paper Industry

Johns-Manville Reports Net Profit—Increased Earnings Shown By Kimberly-Clark—Brown Co. Obtains $9,000,000 RFC Loan—Decreased Net Income For Consolidated — National Gypsum Sales Up 30 Per Cent.

New York Stock Exchange

High, Low and Last for the Week Ending Apr. 26, 1939

	High	Low	Last
Armstrong Cork Co.	37⅜	36½	36½
Celotex Corp.	11⅞	11	11¾
Celotex Corp. pf.	64	64	64
Certain-Teed Products Corp.	8	7¾	7⅞
Certain-Teed Products Corp., pf.	29	28	28¾
Champion Paper & Fibre Co.	21	21	21
Champion Paper & Fibre Co., pf.	98	98	98
Congoleum-Nairn Co.	21½	20¼	20¼
Container Corp. of America	11⅛	10	10¾
Continental-Diamond Fibre Co.	6¼	6	6
Crown-Zellerbach Co.	10⅜	9¾	10
Flintkote Co.	19⅜	18½	19½
Robert Gair	2⅞	2⅝	2⅝
Robert Gair, pf.	9¼	9	9¼
International Paper & Power	8⅜	7⅜	7⅜
International Paper & Power, pf.	30½	28¼	28⅞
Johns-Manville Corp.	73¼	71¼	73
Johns-Manville Corp., pf.	128	127	128
Kimberly-Clark Corp.	21¼	20½	21¼
MacAndrews & Forbes	28⅛	28	28
Masonite Corp.	39½	39½	39½
Mead Corp.	8⅜	8⅜	8⅜
Mead Corp., pf.	52½	52½	52½
Paraffine Companies, Inc.	41⅞	41⅞	41⅞
Rubberoid Co.	22½	21¾	21¾
Scott Paper Co.	46	46	46
Sutherland Paper Co.	25¼	25¼	25¼
Union Bag & Paper Corp.	9	8¼	8¼
United Paperboard Co.	4½	4½	4½
U. S. Gypsum Co.	83	80½	82
U. S. Gypsum Co., pf.	171	170	170

New York Curb Exchange

High, Low and Last for the Week Ending Apr. 26, 1939

	High	Low	Last
American Box Board Co.	6	6	6
Brown Co., pf.	17	11½	14½
Great Northern Paper	33¼	33	33
St. Regis Paper Co.	2⅛	2⅛	2⅛
Taggart Corp.	3½	3⅛	3¼

Johns-Manville Nets $125,118

Consolidated net earnings of the Johns-Manville Corporation and subsidiaries for the first quarter of 1939, amounted to $125,118 after all charges and provision for taxes, but before preferred dividends, Lewis H. Brown, president, announces in a report issued last week. This is in contrast to a net loss of $239,475 corespondingly in 1938.

"While sales of $10,397,408 for the three months were slightly less than the $10,435,119 sales of the 1938 period," Mr. Brown writes, "the net income is somewhat better because of economies we have been able to effect through our continuing program of cost reduction and expense control.

Kimberly-Clark Earns $449,215

[FROM OUR REGULAR CORRESPONDENT]

NEENAH, Wis., April 24, 1939—Slightly improved earnings were reported last week by Kimberly-Clark Corporation, with profit of $449,215 on common stock for the quarter ending March 31 as compared with $435,232 in the comparable 1938 quarter. These earnings were equal to 92 cents per common share as against 89 cents the previous year.

Preferred dividends during the quarter amounted to $149,445. Net profit on common in the twelve months ending March 31 was reported as $1,338,489, or $2.74 per share, as compared with $1,719,249 or $3.52 per share the previous year.

RFC Loan for Brown Co.

The Brown Company has announced that the Reconstruction Finance Corporation had agreed to lend to the company $9,000,000, a sum which would leave it about $8,000,000 of working capital on emerging from 77b reorganization after spending $2,000,000 on improvements to its plant at Berlin, N. H.

The loan, to be a prior lien on all important assets of the company other than current assets, is predicated on the condition that both management and reorganization plan shall be acceptable to the RFC. Under the Federal Bankruptcy Act the plan must be approved by court, security holders and creditors.

Governor Francis P. Murphy of New Hampshire has issued a statement declaring the RFC loan to be "a fine thing for New Hampshire and Maine and for the 10,000 holders of Brown Company bonds and preferred stock."

Consolidated Earns $1.78 Per Share

[FROM OUR REGULAR CORRESPONDENT]

WISCONSIN RAPIDS, Wis., April 24, 1939—Consolidated Water Power and Paper Company's net income for the year 1938 totalled $477,901, as compared with $700,053 in 1937, according to the company's report issued last week. Earnings were equivalent to $1.22 per share against $1.78 in 1937. Net operating profit was down from $920,155 to 773,120.

National Gypsum Earns $190,198

Melvin H. Baker, president, reported last week that earnings of the National Gypsum Company for the first quarter this year were $190,198, equal to 10 cents a share after Federal taxes but before preferred dividends. The comparable 1938 quarter showed $112,176 or 3 cents a share. Sales were up 30 per cent.

Nekoosa-Edwards Nets $20,956

The Nekoosa-Edwards Paper Company report for 1938, net income of $20,956, equal to 34 cents each on 62,125 capital shares, contrasted with $174,641, or $2.84 a share, in 1937.

Oxford Paper Profits Up

The Oxford Paper Company and subsidiaries report for the quarter to March 31, net profit of $111,615, compared with a net profit of $19,324 for the corresponding quarter of last year.

Pejepscot Shows Net Loss of $80,000

The Pejepscot Paper Company including Androscroggin Water Paper Company reports for 1938 a net loss of $80,000, against $168,405 loss in 1937.

Obituary

Wooster Orlin Ball

CARTHAGE, N. Y., April 24, 1939—Wooster Orlin Ball, 85, one of the organizers and at one time president of the Carthage Tissue Paper Company, died suddenly Tuesday evening April 11, at the dinner table in his home at Watertown. He was the victim of a heart attack. He was born September 26, 1853, near Whitesville in the town of Rutland, a son of Henry M. and Mehitable Burnham Ball, pioneer settlers of Jefferson county and descendants of veterans of the Revolutionary war and the War of 1812.

Mr. Ball went to Watertown with his parents at the age of three, spending his early life in that city and attending Watertown High School. For two years, in 1873 and 1874, he was a student at Dartmouth College, leaving that institution to become associated with his father in the butter and cheese business, later to be known as H. M. Ball & Son. For about a year he was a partner of W. W. Conde in the hardware business, which he left to become an incorporator, stockholder and secretary-treasurer of the old Union, Carriage and Gear company of Watertown.

In 1887 Mr. Ball built a pulp mill at Black River which he operated for about ten years. It was in 1895 that he and his brother, W. Drullard Ball, bought the Union Pulp company's Carthage plant which had been established in 1889 by George E. Spicer. They renamed it the Black River Wood Pulp Company.

In January, 1897, they organized, together with James A. Outterson, the Carthage Tissue Paper Company. W. D. and A. R. Ball, half-brothers, also had an interest in the mill, subsequently largest of its kind in the country. W. D. Ball was vice-president, W. O. Ball, secretary-treasurer, A. R. Ball, superintendent, with Mr. Outterson as president at the time of organization. Later Mr. Outterson sold out his interests to the Ball family which retained controlling shares of stock, with W. O. Ball becoming, in 1914, president and treasurer.

Mr. Ball retired in August, 1917, when the mill was sold to the National Paper Products company, a subsidiary of the Crown-Zellerbach interests.

On June 23, 1881, he married Kate L. Baker of Watertown at Chicago. He had always enjoyed remarkably good health which he attributed to his participation in sports of all kinds.

Charles B. Maxson

Charles B. Maxson, president of the Maxson Automatic Machinery Company, died at Westerly, R. I., on April 20 at the age of 88 years and five months. He was born at De Ruyter, N. Y., November 10, 1850, the son of Charles H. Maxson and Sena Ann Enos.

He attended De Ruyter Institute and at the age of 20 came to Westerly where he learned the machinist's trade in the shop of Cottrell & Babcock. In 1875 he returned to Cazenovia, N. Y., to marry Julia A. Wells. They immediately made their home at Westerly where they resided the rest of their lives. Mrs. Maxson died in 1932. Mr. Maxson's church affiliations were with the Seventh Day Baptist Church, of which he was believed to be the oldest living member.

His inventive genius and progressive turn of mind afforded him a long and interesting career. He invented and developed a number of machines for the handling and counting of sheet papr which are in extensive use today throughout domestic and foreign paper mills. He founded the Erie Lay-Boy Company, Ltd., Erie, Pa. and was still actively connected with this company at the time of his death.

To the end, his mind was exceptionally alert and despite his advanced years he still felt the urge for more constructive work.

Surviving are two sons, Charles D. Maxson and Julian W. Maxson, two grandchildren and two great grandchildren. The funeral was held April 22 at Westerly.

Plans for Superintendents Meeting

Col. A. E. Giegengack, Public Printer of the United States, is giving the utmost cooperation to the American Pulp and Paper Mill Superintendents Association in the arrangements for the Twentieth Annual Convention which will be held at the Wardman Park Hotel, June 13, 14 and 15, Washington, D. C. In fact, the entire program for Wednesday afternoon will be in charge of the Government Printing Office staff. George Ortleb, Deputy Public Printer will read a paper on "The Handling of Paper." L. K. Johnson, Assistant Foreman of the Main Press Room will discuss "Paper Difficulties", and William H. Dahl, Foreman of the Postal Card Money Order Section will discuss "The Effect of Humidity On Paper and Printing."

The visiting paper makers will also be conducted on a tour of the Government Printing Plant, which is the largest in the world.

Wallace Shymanski of the Marathon Paper Mills Company has lined up an excellent program for the Finishing Group Meeting. William J. Riegers of the Beckett Paper Company will address this group on "Costs and Standards In Finishing Room Operations."

William L. Ennis, Manager of Claim Prevention Department of the Milwaukee Road will discuss "Shipping Paper Safety to Customers," and Mr. Shymanski is framing plans that will provoke an active round table discussion on that terrible sore spot in all paper mills "How to Handle Finishing Room Broke."

National President F. L. Zellers has announced that Fred. Lodding will read a paper on "The Application of Doctors to the Paper Machine" at Thursday morning's general session.

H. H. Harrington, general manager of the District of Columbia Paper Manufacturing Company will be toastmaster at the Tuesday Luncheon.

The exposition of pulp and paper mill equipment promises to be one of the most complete in the history of the industry.

Convention Manager George W. Craigie announces that forty-eight leading members of the allied industries have already reserved sixty-five booths and only eighteen booths remain to be sold so all those who are contemplating an exhibit at the Washington Convention had better move quickly before the space is exhausted.

Association Issues Buyers' Guide

PHILADELPHIA, Pa., April 24, 1939—The Philadelphia Paper & Cordage Association, at their regular monthly meeting, April 21st, held in Adelphia Hotel, distributed to their members a copy of the "Gold Book" which is a Buyers' Guide for Association members.

The book is the most pretentious and elaborate book of this kind published. It contains the sales messages of eighty members. Each member was given permission to submit on his letterhead any sales message or list of products handled. All of these letterheads have been handsomely bound in covers of gold, attractively printed and secured with a bright red plastic binding. One copy of the "Gold Book" will be placed on the desk of each member's purchasing agent where it will provide a complete Buyers' Guide for any paper or cordage product. Its purpose is to promote the interchange of business among members, and to enable members to help each other by knowing exactly what every other member has to sell.

Previoius issues of this "Gold Book" have resulted in the interchange of many thousands of dollars worth of business, and it is expected that the impetus given this movement by the publication of the new modern book will more than double previous efforts along reciprocity lines. It represents a tremendous cooperative effort and is sure to result in much increased business for Philadelphia Paper & Cordage merchants.

Charles Koenig, sales agent, 12 South 12th street, was elected to membership in the Association, and Sherman Paper Products Corp. of Newton, Upper Falls, Mass. was proposed by the membership committee; this application will be acted upon at the next regular meeting in May.

E. L. Richards, chairman of the Golf Committee, displayed an endless assortment of prizes, which have been purchased and donated for the first golf tournament of the season, scheduled for Wednesday, April 26th, at Pine Valley, N. J. course. Judging from the number of advance reservations that have been made, the tournament promises to be the largest ever held.

Empire State Elects Officers

The annual meeting of the Empire State Paper Association was held at Syracuse, April 4, with an excellent attendance. President J. V. McCarthy, of the J. & F. B. Garrett Company, Syracuse, presided and announced the admission of several new members: Miller Paper Company, Syracuse, Syracuse Paper and Twine Company, Syracuse, Robfogel Paper Company, Rochester, and Oken Paper Company, Rochester.

At the conclusion of the meeting, the following officers were elected for the ensuing year and the new president, M. S. Dilts, Hubbs & Howe Company, Buffalo, took the chair.

Vice-President, Wrapping Division, C. Howard Maurinus, the Alling & Cory Company, Rochester.

Vice-President, Fine Division, H. L. Cowan, Franklin-Cowan Paper Company, Buffalo.

Secretary and Treasurer, C. A. Morgan, Cramer-Force Company, Rochester, N. Y.

Directors, in addition to the above—S. T. Jones, Hudson Valley Paper Company, Albany; W. L. Van Alstine, Hudson Falls Paper Company, Albany.

Summer Chemistry Program

Announcement is made by the Department of Chemical Engineering of the Massachusetts Institute of Technology, Cambridge, Mass., of the fourth special summer program in theoretical and applied chemistry and physics of matter in the colloidal state.

The five-week course, beginning July 24, is under the direction of Dr. Ernst A. Hauser. The program consists of lectures, round-table discussions, practical training in laboratory and research work, and is offered to men actively engaged in industry or research and to graduate students.

The tuition fees for the five weeks is $150, including the registration fee. A limited number having satisfactory training are permitted to take the lectures without laboratory work, at a tuition fee of $75. Those interested in obtaining reservations are requested to communicate with Dr. Hauser in advance. For other arrangements, the Department of Chemical Enginering will be glad to answer inquiries and find suitable accommodations if notified in advance of arrival.

To Make Crepe Paper in Chicago

CHICAGO, Ill., April 24, 1939—The Dennison Manufacturing Company will move part of its manufacturing activities from Framingham, Mass., to this city. It has leased the factory building at the southwest corner of West 47th street and South Kedzie avenue, in the Kedzie development of the Central Manufacturing district, for eleven years commencing May 1, with an option for an extended period.

According to William Kaplan, who represented all parties, the Dennison company at once will install modern machinery for the manufacture of crepe paper. Heretofore all its crepe paper making has been done in Massachusetts, at the main plant.

It now employs about one hundred persons in its Chicago operations. When the new manufacturing activities are under way it will have approximately three hundred on its plant roster.

The company, established in 1844, has its main factory at Framingham on a seventy-six acre site. It has a branch plant at Marboro, covering five acres, and the Chicago factory where a few specialties other than crepe paper are made.

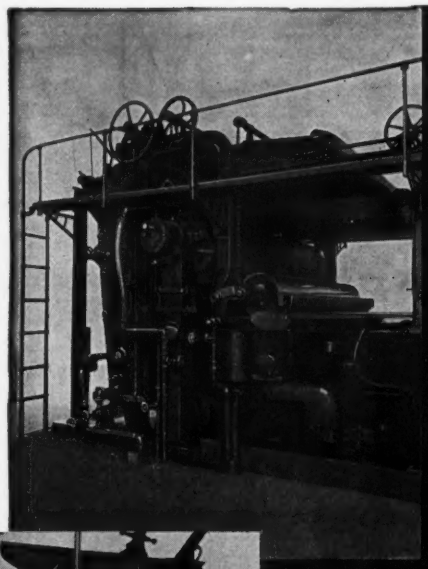
Hinde-Dauch Officials Reelected

SANDUSKY, Ohio, April 24, 1939—Officers and directors of Hinde-Dauch Paper Company were reelected at the annual stockholders meeting. Returned to offices were Sidney Frohman, Sandusky, president and general manager, and William P. Pfeiffer, Sandusky, secretary-treasurer.

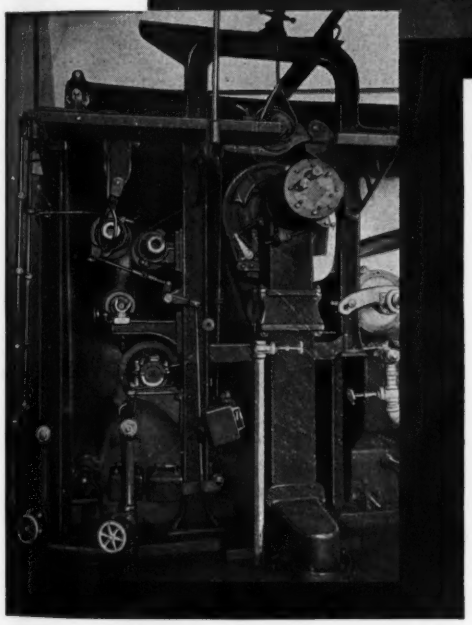
Re-elected directors included Maynard H. Murch and H. C. Robinson of Cleveland; William Dauch of Westminster, O., and Wade W. Dauch and Charles E. Frohman of Sandusky.

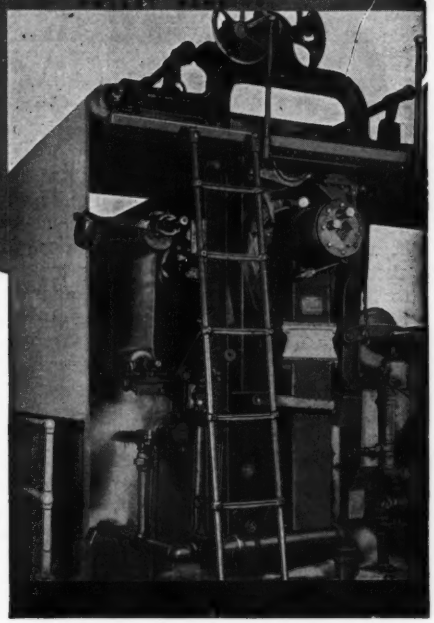
Hans Lagerloef Honored

Hans Lagerloef, president of the Lagerloef Trading Company, 52 Vanderbilt avenue, New York, has been notified by cable that he has been made a Commander of the White Rose of Finland. Mr. Lagerloef's many friends in the pulp and paper industry will be interested and pleased to learn that this unusual honor has been conferred upon him.



BELOIT SUCTION *Drum Press*





Results: Equivalent to suction drum and suction primary press combined

An absolute necessity on every board machine

Superior to all other methods of water removal on wet felts. • There must be a reason for over thirty of these rolls.

Ask the mills who installed them.

THE BELOIT WAY BELOIT IRON WORKS PAPER MACH'Y BELOIT WIS. **IS THE MODERN WAY**

BELOIT IRON WORKS, Beloit, Wisconsin, U. S. A.

CONSTRUCTION NEWS

A Summary of Vital Facts Regarding Construction, Financing and Operation of Pulp and Paper Mills

General Construction News

Cornell, Wis.—The Cornell Wood Products Company, manufacturer of wood pulp board and other board specialties, has completed plans for new addition to mill, consisting of a one-story structure, to be used primarily for storage and distributing service. It is reported to cost close to $40,000, including equipment. Work is scheduled to be placed under way soon.

Portland, Ore.—The Lloyd A. Fry Roofing Company, 5302 West 66th street, Chicago, Ill., manufacturer of prepared roofing products, affiliated with the Volney Felt Mills, Inc., same address, has approved plans for new branch mill at Portland, where tract of about eight acres of land has been selected at N. W. Yeon and Thirty-fifth avenues. Plant will comprise several one-story buildings, with main unit about 150 x 550 feet, and is estimated to cost close to $200,000, with equipment. General erection contract has been let to the Dougan Hammond Construction Company, Rothchild Building, Portland, and work will be placed in progress at early date.

Greensboro, N. C.—The American Paper Products, Inc., 2113 East Rush street, Philadelphia, Pa., manufacturer of paper tubing, paper textile cores and kindred products, has leased a building at 407-11 South Ashe street, Greensboro, and will improve and equip for new branch plant. Facilities will be provided for sizable output. It is proposed to have unit ready for service during the spring. L. J. Perelman is treasurer.

Leominster, Mass.—The E. F. Dodge Paper Box Corporation has been incorporated with capital of 500 shares of stock, no par value, to manufacture folding paper boxes and allied paper containers. It will take over and succeed to the E. F. Dodge Paper Box Company, with local plant at 124 Central street. Jacob Hiatt is president and treasurer of company.

Niagara, Wis.—The Kimberly-Clark Corporation, Neenah, Wis., manufacturer of book and cover paper stocks, etc., has awarded general contract to the James Leck Company, 211 South Eleventh street, Minneapolis, Minn., for new addition to power house at branch mill at Niagara, to be 60 x 90 feet, and 80 feet high. New boiler units and other equipment will be installed, as previously noted in these columns. Erection is scheduled to be placed under way at once.

Bath, N. Y.—The Silloway & Lanning Company, Corning, N. Y., manufacturer of paper specialties, has concluded negotiations for acquisition of the former textile mills of the Augusta Knitting Company and Bath Silk Mills, Inc., both at Bath, and will take immediate possession. The two buildings will be remodeled and improved, with installation of equipment for the manufacture of a line of paper novelties. It is expected to have the plants ready for service at early date.

Iuka, Miss.—D. C. Jones, Iuka, Tishomingo County, Miss., is interested in a project to construct and operate a local pulp and paper mill, to be used for the production of newsprint, and has donated a tract of 400 acres of land as site for plant. Plans for the new mill will be drawn at once, with work scheduled to begin during the summer. New mill will consist of several large units for pulp and finished paper divisions, with power house, machine shop, pumping station and auxiliary structures. It is estimated to cost about $5,000,000 and negotiations are being concluded with Reconstruction Finance Corporation, Washington, D. C., for a loan on one-half this amount, the remainder of the fund to be secured privately. Mississippi slash pine will be used for raw material and option has been taken on 20,000 acres of such timberlands, where lumbering camps will be established with installation of saw mills, boiler plants and accessory structures; it is proposed to increase these timber rights at early date and fund of approximately $500,000 will be used for this purpose. A company is being organized to carry out the project, including operation of mill, which is now scheduled for completion in the early fall of 1940. W. L. Goodman, Water and Light Department, Iuka, is active in project.

Manitowoc, Wis.—The Kieckhefer Container Company, 1715 West Canal street, Milwaukee, Wis., manufacturer of corrugated paper boxes and containers, is securing estimates of cost and recommendations for building designs from several contracting companies for its proposed new plant at Manitowoc, where tract of land was acquired recently, as noted in these columns. The site selected is on South Eighteenth street, near Dewey street, and will provide for future expansion. Initial mill will approximate about 70,000 square feet of floor space and will be of one-story type. Cost of plant is reported close to $150,000, with equipment. Early decision will be made for contract award, and erection placed under way.

Greenville, S. C.—The Gaylord Container Corporation, 2820 South 11th street, St. Louis, Mo., manufacturer of corrugated fiber boxes and containers, is beginning work on reconditioning and improving the former cotton mill No. 2 of Judson Mills at Greenville, located near the Easley bridge road, recently acquired for new branch plant. During the past few weeks work has been in progress on removing the textile machinery from the structure and

this dismantling has now been completed. The Gaylord company will begin installation of equipment at early date and proposes to have the plant ready for service about the middle of June. Facilities will be provided for large capacity.

Clifton, N. J.—The Passaic Valley Sewerage Commission, Newark, N. J., has negotiations under way with the Clifton Paper Board Company for the installation of waste-handling equipment at its mill to eliminate the flow of such material into the Passaic Valley sewerage system, including tank units and other facilities. The company recently completed the installation of additional machinery at mill for increased capacity, resulting in corresponding greater accumulation of waste for disposal.

Los Angeles, Cal.—The Pioneer Flintkote Company, South Alameda street, Vernon district, manufacturer of paper board products, roofing papers, etc., has filed plans for a new boiler house at plant, to include installation of boiler unit and auxiliary equipment. No estimate of cost has been announced. General contract for erection has been let to the William P. Neil Company, 4814 Loma Vista street, Los Angeles.

New Companies, Etc.

Chicago, Ill.—The Metro Reliable Paper Box Company, 2015 Race street, has been incorporated with capital of $10,000, to manufacture paper boxes and containers. It is proposed to operate a local plant at early date. Incorporators of company include M. Green and S. Sessler. New company is represented by M. L. Durchslage, 160 North LaSalle street, Chicago.

New Bedford, Mass.—The Fibro Products Company, Inc., has been incorporated with capital of $50,000, to manufacture and deal in fiber products. Samuel B. Finger, P. O. Box No. 53, New Bedford, is president, and Thornton B. Lyman, New Bedford, treasurer.

Plainfield, N. J.—The plant and equipment of the Waxed Products Company, Inc., 633 North avenue, manufacturer of waxed and processed paper specialties, was sold recently at a public sale in bankruptcy. The sale included a plant building of about 50,000 square feet of floor space, machinery, equipment and stock.

Philadelphia, Pa.—S. Maxman, 515 South Randolph street, paper mill supplies, has filed notice of registration of company to operate at location noted. Business is headed by B. Maxman, 6212 Washington avenue, Philadelphia.

Southeastern Paper Men to Play Golf

The Annual Invitation Golf Tournament and Outing of the Southeastern Paper Trade Association will be held this year June 16 to 17 inclusive at Virginia Beach with headquarters at the Cavalier Hotel. The association will have its customary two day golf tournament with ten top-ranking prizes to be awarded. In addition to this there will be many Beach Club activities including swimming and the customary inside festivities. A cordial invitation to attend is extended to all manufacturers of paper, paper dealers and representatives in general of paper concerns. Otto F. Hamilton of the Hamilton Paper Corporation, 7 South 14th street, Richmond, Va. is Chairman of the Southeastern Paper Trade Association.

CIO Loses in Elections at Hawthorne

KALAMAZOO, Mich., April 24, 1939—In a National Labor Relations Board Wagner Act election April 18 at the Hawthorne Paper Company a majority of more than two to one of the employes voted against being represented in collective bargaining by the United Paper Mill Workers Local Industrial Union No. 398 (CIO).

This was the first NLRB election conducted in a Kalamazoo plant.

With 117 out of 121 eligible production and maintenance employees voting, 33 voted to be represented by the union and 84 voted against the union for collective bargaining.

"Everyone concerned in the conduct of the election was very fair," George H. Gerpheide, president of the Hawthorne Paper Company, said. "I am very much gratified so many of the employees expressed themselves by voting and that the decision was really indicative of the will of the employees as a whole."

Perry Coon, president of the United Paper Mill Workers Local Industrial Union No. 398, said he "wanted to commend the officers of the mill for their splendid cooperation and efforts in conducting the election. We have no other remarks to make. The election was conducted in an orderly fashion."

The election was conducted by T. H. McKeon and E. J. Sweeney, Jr., representing the regional office of the National Labor Relations Board; Coon and Frank Moler, representing the union; and Norman J. Cowie and Myron M. Porlier, representing the management.

Government Paper Bids

WASHINGTON, D. C., April 26, 1939—The Government Printing Office has received the following bids for 33,800 pounds (200,000 sheets) of 28 x 31 dull coated book paper: Walker, Goulard Plehn Company, 6.14 cents; R. P. Andrews Paper Company, 6.1, 6.54, 7.3 and 8.14 cents; Stanford Paper Company, 6.65 cents; Whitaker Paper Company, 6.63 cents; Barton, Duer & Koch Paper Company, 6.59 cents; Cauthorne Paper Company, 8.14 cents; J. F. Post, Inc., 6.95 cents; Marquette Paper Company, 6.04 cents; and Enterprise Paper Company, 6.74 cents.

For 5,000 sheets of 30 x 36 gray pressboard; Old Dominion Paper Company, $171.98 per M sheets; Walker, Goulard Plehn Company, $315.70 less 2 per cent; Barton, Duer & Koch Paper Company, $311.60; Whitaker Paper Company, $201.90 and Andrews Paper House of York, $168.00.

For 40,000 pounds of newsprint paper in 24 rolls; Barton, Duer & Koch Paper Company, 2.97 cents; Paper Corporation of U. S., 2.95 cents; Old Dominion Paper Company, 2.988 cents; and National Pulp and Paper Company, Inc., 2.425 cents.

J. E. Waterhouse Visits South

TURNERS FALLS, Mass., April 24, 1939—J. E. Waterhouse, vice-president and general manager of Montague Machine Company of this city, has started Friday, April 14, on an extended business trip through the southern part of the United States. Going down through Pennsylvania and Virginia, Mr. Waterhouse will visit all the southern states. He will travel by automobile and expects to be away about a month.

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Ronald G. Macdonald
Editor Technical Section

Lynne M. Lamm
Washington Correspondent

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COMING EVENTS IN PAPER INDUSTRY

TECHNICAL ASSOCIATION OF THE PULP AND PAPER INDUSTRY, Fall Meeting, Syracuse Hotel, Syracuse, N. Y., September 12-14.

NEW ENGLAND SECTION. Technical Association of the Pulp and Paper Industry—Third Friday of each month at the Roger Smith Hotel, Holyoke, Mass.

DELAWARE VALLEY SECTION. Technical Association of the Pulp and Paper Industry—Second Friday of each month at the Engineers Club, Philadelphia, Pa.

LAKE STATES SECTION. Technical Association of the Pulp and Paper Industry—Second Tuesday of each month at the Conway Hotel, Appleton, Wis.

KALAMAZOO VALLEY SECTION. Technical Association of the Pulp and Paper Industry—First Thursday of each month at the Park, American Hotel, Kalamazoo, Mich.

AMERICAN PULP AND PAPER MILL SUPERINTENDENTS ASSOCIATION, Annual Convention, Wardman Park Hotel, Washington, D. C. June 13-15.

FIRST ANNUAL SOUTHERN PAPER FESTIVAL, Savannah, Ga. April 16-19.

NATIONAL SAFETY COUNCIL, PAPER AND PULP SECTION, Annual Meeting, Atlantic City, N. J. October 16-20.

FOR WAGNER ACT REVISION

A revision of the Wagner Labor Relations Act, rather than repeal appears more probable at this date. Hearings on amendments opened at Washington on April 11 before the Senate Committee on Education and Labor. The public demand for revision of this much criticised law seems to be widespread and changes in the present Act are urged by legislators of both major political parties, by the American Federation of Labor, by the United States Chamber of Commerce, by the National Association of Manufacturers, by the legal profession, and by the National Grange representing farmers.

"In appearing before the Senate Committee, Senator Robert F. Wagner, democrat of New York, author of the Act, chairman of the Senate Committee on banking and Currency, and Chairman of the National Labor Board, said in part: "The proof is overwhelming that the Labor Act, in its broad outlines, has proved an effective instrument for economic peace and industrial justice. It has vastly benefited workers, employers and the public at large. No one challenges its objectives; no responsible party advocates its repeal. Any diminution of its effectiveness would be a national evil; its mutilation would be a national calamity."

The National Labor Relations Act, popularly known as the Wagner Act, became law on July 5, 1935. The Act was widely heralded as a method for the prevention and peaceful settlement of complaints against employers by employees and their representatives. Although a substantial decrease in the number of industrial disputes is shown between 1937 and 1938, the number in the latter year may be attributed in part to the business depression. According to the Monthly Labor Review of the United States Department of Labor, the number of strikes in 1934 was 1856; in 1935, 2014; in 1936, 2172; in 1937, 4740, and the estimated number of strikes in 1938 was 2350.

William F. Green, president of the American Federation of Labor criticised the Wagner Act as arbitrary and dictatorial and said in part: "We saw in this measure a new 'bill of rights' for labor: it has been used to nullify the rights of unions established during half a century. Under this Act, workers were to be safeguarded in organizing, free from employer interference. Instead, labor has found itself coerced by a new and powerful bureaucracy. There was guaranty also of the workers' right to bargain collectively through agencies of their own choice. This freedom has been curtailed or denied in arbitrary, dictatorial ways. We had every reason to expect that the intended clarification of labor relations would lessen strife, help build industrial peace, aid recovery. We have been amazed at finding the actual results to be heightened uncertainty and an increase in confusion and conflict."

In pointing out that important amendments will be required in the Act, a report of the American Bar Association said in part: "The events which have transpired since the decision of the Supreme Court upholding the National Labor Relations Act are matters of common knowledge. They clearly indicate, in our opinion, that important amendments, going to the substance of this Act, will be required to make its administration acceptable, particularly in order to safeguard the public interest as distinct from the interest of the employer and employee."

The National Association of Manufacturers advocated amendments to the Wagner Act when it was pending before Congress in 1935. Among the principal amendments to bring the defective Act into balance, the Association recommends consideration of the following aspects: (1) "The Act now deals only with those labor disputes which are caused by unfair practices on the part of employers, or by refusal on their part to bargain collectively with the representatives of their employees. The objective should therefore be re-stated so as to recognize that employers are not the only people whose practices may cause, and have caused, obstructions to, and burdens upon, interstate commerce.

(2) The present Act places great emphasis upon the promotion of collective bargaining. This has apparently been interpreted by the National Labor Relations Board and its agents and employees, as a mandate to lend their efforts under all circumstances

to the agencies of unionization. The law should recognize the right of men to join labor organizations, but it should also recognize that those who belong to organizations represent only a small minority of all workmen, and that the right not to join is entitled to the same protection as the right to join. (3) Among the instruments most frequently used for the oppression of individual employees and minority groups, are the closed shop, the check-off, and the so-called majority rule as it now stands in the National Labor Relations Act and as interpreted by the Board in its decisions. We think, therefore, that the Act should forbid the closed shop arrangement under which an employee may be required to join a labor organization as the price of securing or retaining employment."

In advocating proper protection of the employer, and restriction of the practice of the Labor Board favoring one type of labor organization over another, the Association recommended amendment to assure a fair trial and adequate court review to all those accused of violating any of the provisions of the law. In summarizing its recommendations for revision of the Act the Association said in part: "In short, the position of the National Association of Manufacturers is that there can be no permanent solution of labor problems so long as the law places restraints upon one party to the employer-employee relationship, and leaves the other party free of all restraint. The National Labor Relations Act should be revised."

Parsons Leaves I. P. Co.

John P. Parsons resigns this month from the sales staff of the International Paper Company with which he has been associated since 1924. He plans to engage in sales promotion and research.

Mr. Parsons represents the third generation of his family in the paper industry. His grandfather founded the paper manufacturing company of W. H. Parsons & Co., in 1853 with mills in Maine and was one of the early presidents of the American Paper and Pulp Association. He was also one of the first manufacturers to utilize chemical and mechanical pulp in the production of newsprint.

In 1900 his father, W. H. Parsons Jr., and his uncle, Marselis C. Parsons, founded Parsons Brothers. This was the first export firm in the United States to deal exclusively for export in paper, paper products, mill supplies and printing machinery. The firm expanded until it embraced thirteen offices throughout the world. The partnership was changed to a corporation, the Parsons Trading Company, in 1908. Later the father organized the firm of Parsons & Whittemore.

Mr. Parsons was in the class of 1912 at Yale. He served as a lieutenant in the Quartermasters Corps during the World War. Prior to becoming associated with the International Paper Company he travelled extensively in South America, Australia and the Scandinavian countries in the interests of American papers and paper products.

Production Ratio Report

(These statistics are based upon paper production reports to the American Paper and Pulp Association).

COMPARATIVE MONTHLY SUMMARIES[1]

Months	1939	1938	1937	1936	1935	1934
January	77.5%	63.9%	90.3%	76.1%	65.8%	.....
February	81.8%	68.7%	90.1%	77.9%	70.0%	.....
March	84.2%	69.6%	90.3%	76.0%	70.5%	.....
April	.....	68.3%	92.1%	82.3%	70.0%	.....
May	.....	69.0%	90.6%	81.6%	69.4%	.....
June	.....	66.0%	87.3%	80.7%	72.3%	.....
July	.....	72.0%	81.8%	77.3%	64.9%	.....
August	.....	77.2%	82.9%	81.5%	70.9%	.....
September	.....	76.3%	78.6%	80.5%	71.9%	58.2%
October	.....	82.5%	73.5%	87.6%	75.6%	64.7%
November	.....	79.6%	61.9%	88.0%	75.3%	61.7%
December	.....	74.4%	54.5%	85.9%	71.2%	59.6%
Year Average	.....	72.3%	80.6%	81.3%	70.5%	.....
First 15 weeks	81.5%	67.6%	90.6%	77.6%	68.7%	.....

COMPARATIVE WEEKLY SUMMARIES[1]

CURRENT WEEKS, 1939		CORRESPONDING WEEKS, 1938	
March 11	84.5%	March 12	70.1%
March 18	82.1%	March 19	69.3%
March 25	84.1%	March 26	68.5%
April 1	86.6%	April 2	72.3%
April 8	84.7%	April 9	67.3%
April 15	80.3%	April 16	68.0%

The following statistics show the number of mills reporting by ratio groups:

	Number of Mills Reporting—Current Weeks					
Ratio Limits	Mar. 11, 1939	Mar. 18, 1939	Mar. 25, 1939	Apr. 1, 1939	Apr. 8, 1939	Apr. 15, 1939
0% to 50%	60	51	56	50	48	33
51% to 100%	247	249	245	246	225	168
Total Mills Reporting	307	300	301	296	273	201

PAPERBOARD OPERATING RATIOS

Per cents of operation based on "Inch-Hours" reported to the National Paperboard Association.

Year	Jan.	Feb.	Mar.	Apr.	May	June	July
1935	62%	68%	68%	63%	61%	66%	62%
1936	62%	67%	67%	70%	69%	70%	69%
1937	80%	86%	86%	88%	85%	77%	66%
1938	54%	60%	61%	57%	58%	56%	57%
1939	60%	67%	71%	....	....	....	....

Year	Aug.	Sept.	Oct.	Nov.	Dec.	Avg.
1935	67%	71%	77%	71%	61%	66%
1936	75%	78%	82%	80%	74%	72%
1937	74%	69%	65%	55%	45%	73%
1938	66%	66%	70%	65%	59%	61%

Week end. March 11, 1939—70%
Week end. March 18, 1939—70%
Week end. March 25, 1939—73%
Week end. April 1, 1939—74%
Week end. April 8, 1939—71%
Week end. April 15, 1939—67%

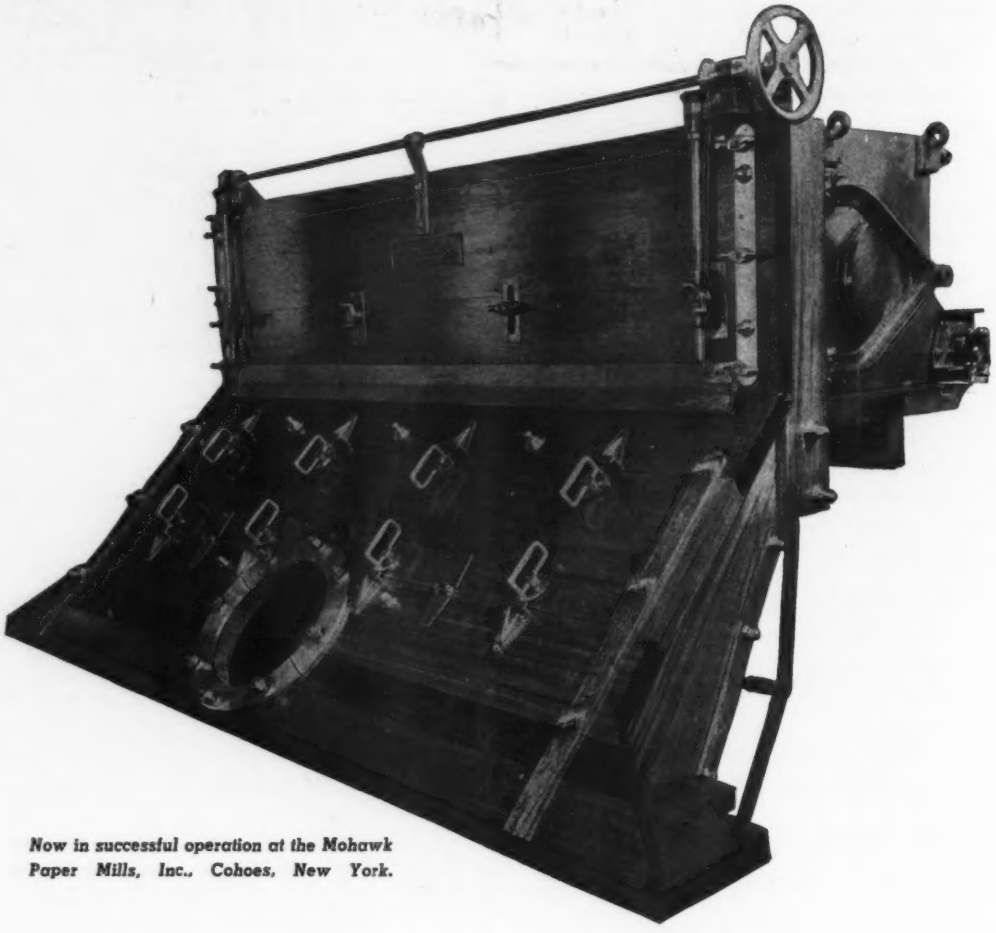
[1] Production-capacity ratios are based upon six-day capacity ratings which are adjusted periodically to correspond with the ratings reported by individual companies. Ratios are subject to revision until all reports are received.

Reach Agreement on Wallboard

WASHINGTON, D. C., April 26, 1939—An agreement has been reached between Swedish, Finnish, and Norwegian manufacturers of wall board and the corresponding sales organizations in Great Britain and the Netherlands, according to reports from the office of the American Commercial Attache, Stockholm. The agreement, which also is adhered to by British manufacturers, aims to bring about more ordered conditions on the British and Dutch wallboard markets, where hitherto more or less chaotic conditions have prevailed. In respect of the Netherlands it refers to both price and other sales conditions, while for the British market no price agreement has been made.

The Swedish production of wallboard has expanded rapidly since the first factory was established about 10 years ago, and at present there are 13 mills in the country with a total capacity of 140,000 tons. With this figure Sweden, which itself is the world's largest consumer of wallboard, if calculated per capita, takes second place among the wallboard producing countries, next to the United States.

The Entirely NEW Sandy Hill Bertrams Flow Distributor



Now in successful operation at the Mohawk Paper Mills, Inc., Cohoes, New York.

Designed for your particular operating requirements to give:

Stock uniformly spread over the full width of the machine, irrespective of consistency, tonnage or paper speed.

Equal distance traveled by each particle of stock whether delivered to the edges or the center of any machine.

Paper of more even caliper testing uniformly in strength and stretch.

Cockling due to formation reduced to absolute minimum.

Predetermined amount of mixing of stock, discharging it from box in perfect condition for forming sheet, permitting a longer fibered sheet with a good formation.

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Sole licensee in the U.S.A. for this patented flow distributor.

Section of the
Technical Association of the Pulp and Paper Industry

Edited by Ronald G. Macdonald, Secretary

Review Of Paper Industry Literature

Copies of United States Patents can be obtained from the United States Patent Office, Washington, D. C. for 10 cents each. Send currency, not stamps.

Raw Materials

Chemical Investigation of Wood Substances. VIII. Properties of Pulps Obtained from Woods in the Course of Thinning Out Forests. K. Nishida, R. Miyama and H. Imazato. J. Cellulose Inst. Tokyo 14: 5-9 (1938).—The chemical properties of the sulphite pulp prepared from *Cryptomeria japonica* (Masugi and Kuroshinsugi), *Chamaecyparis obtusa, Pinus densiflora,* and *Pinus thunbergii* are tabulated *Cryptomeria japonica* is easily digested and the pulp is white and fine-fibered, but the yield is low. *Chamaecyparis obtusa* requires a concentrated liquor for satisfactory delignification but the yield is higher. Both the pine species produce high yields, but the pulps are mostly rather resinous and the fiber coarser than those from the other species.—A.P.-C.

Pulp Woods and Pulps. I. Manufacture of Pulps from Manchurian Woods. N. Migita. J. Cellulose Inst. Tokyo 14: 14-28 (1938)—The following woods were studied: (1) *Picea obovata* Ledeb., (2) *Abies nepherolepis* Max, (3) *Pinus koraiensis* S. & Z., (4) *Populus maximowitzii A. Henry,* (5) *Tremula L.,* (6) *Tilia mandschurica* R. & M., and (7) *Betula mandschurica* Nakai. The changes in chemical properties on sulphite pulping and bleaching these woods were investigated, and the fiber length measurements both before and after beating are given. (1) gives a long-fibered pulp of medium strength, the chemical constants of which after bleaching, however, are equal to, and in some cases greater than, those of some commercial rayon pulps on the market. The alcohol-benzene extract is low (1.97 per cent). As a source of rayon pulp (2) is a little inferior to (1) although its strength is higher. (3) which in comparison is highly resinous (4.95 per cent of alcohol-benzene extract), is digested only with difficulty by the sulphite process, but since its fibers are quite as long as those of (1) and its strength is greater than that of (2) it offers, under suitable cooking conditions, a good material for paper making. The hardwoods (4) to (7) are unsuitable for either paper or rayon pulps because of their inferior physical and chemical properties, although they are easily digested to give good pulp yields.—A.P.-C.

Chemical Investigations of Wood Substances. IX. Bleaching of Pulps Obtained from Forest Thinnings. K. Nishida, R. Miyama and H. Imazato. J. Cellulose Inst. Tokyo 14: 58-61 (1938).—Pulps from *Cryptomeria japonica* (Masugi and Kuroshinsugi), *Chamaecyparis obtusa, Pinus densiflora,* and *Pinus thunbergii* were subjected to two-stage hypochlorite bleaching. Alpha-cellulose contents of 91 to 92% were obtained, which, coupled with low ash and resins contents and satisfactory viscosity, suggests that the pulps are suitable for viscose production. Low yields obtained in some cases may be ascribed to slight overbleaching.—A.P.-C.

Manchurian Woods for Manufacture of Pulp. II. Chemical Composition of Manchurian Hardwoods. I. Miura and T. Nakatsuka. J. Cellulose Inst. Tokyo 14: 63-65 (1938).—The chemical constants of ten woods are tabulated. The average "total cellulose" content was 52.2% and alpha-cellulose content 35.75%.—A.P.-C.

Celluloses. VI. Pulping of Lauan Woods. E. Hu and T. Ito. J. Cellulose Inst. Tokyo 14: 62 (1938).—The properties of the sulphite pulps from four different Lauan wood samples are tabulated. Dark-colored wood was digested only with great difficulty, the pulp having a high (34.4%) lignin content. Pulps from light-colored woods had lignin contents of about 9%.—A.P.-C.

Bagasse Pulp for Paper Manufacture. Y. Yatsuhama. Int. Sugar J. 40:39 (1938).—Bagasse does not differ much from coniferous wood fiber as raw material for the manufacture of paper pulp, but it contains less lignin. The sulphite process is not applicable to it, but the nitrate method can be employed to advantage to give a pulp containing not more than 7% pentosan and 88 to 90% of alpha-cellulose. For rayon manufacture the pulp is unsuitable, its fibers being too short and its impurities content too high.—A.P.-C.

Miscellaneous

A Trip Through Finland's Pulp and Paper Industry. Hans Kotte. Zellstoff U. Papier 17, No. 12:546-552 (Dec., 1937); 18, No. 1:16-20; No. 2: 59-61; No. 3:130-34; No. 4:198-200 (Jan.-April, 1938).—The author first tells of the situation of Finland's pulp and paper industry in relation to foreign countries, especially England and Germany. A general survey of Finland's pulp and paper industry with the more important centers described, and a brief accounting of the progress made, especially since the "World War." The Finnish Central Laboratory, the sulphate mill at Kotka, the Enso Gutzeit mill with a schematic description of the entire operation of pulp manufacture and by-products; the three mills of the Kymmene company are described in detail, machine production, digestors, etc.; then the Kexholm mill was described; the electric boilers and the manu-

facture of chlorine at the Enso mill, the sulphate pulp mill at Kaukopaa with the Minton dryer, the new paper machine for making grease-proof paper at the Tornator mills, and in conclusion the author describes the trade relations between Germany and Finland.—J.F.O.

The Leipzig Wind Paper Mill of the Year 1801. A Suggestion for the Solution of Paper History Questions. H. Bockwitz, Leipzig. Wochbl. Papierfabr. 69, No. 10:205-08 (March 5, 1938)—Description and history of the wind paper mill of Leipzig in the year 1801.—J.F.O.

The paper mill in Izmit, Turkey. Ernst Elgerus. Z. Papier, Pappe, Zellulose, Holzstoff 56, No. 8:106-108 (April 30, 1938); B. I. P. C. 8:390.—An illustrated description of the new paper and board mill in Turkey is given. It houses one Fourdrinier paper machine and one combined Fourdrinier-four vat board machine.—C.J.W.

Four of the New Mills in the South. Reginald Trautschold. Paper Trade J. 106, No. 17:19-58 (April 28, 1938).—A detailed description of the mills of the St. Joe Paper Co. at Port St. Joe, Fla.; the Brunswick Pulp and Paper Co., at Brunswick, Ga.; the Chesapeake-Camp Corp., at Franklin, Va.; and the Container Corp. of America, at Fernandina, Fla.—A.P.-C.

New Mill of the Chesapeake-Camp Corporation. Anon. Paper Ind. 20: 52-60 (April, 1928).—A general description of the mill.—A.P.-C.

The Pulp and Paper Industry in North Carolina. John C. Baskerville. Mfrs.' Record 107, No. 2:28, 64 (1938).—The pine forests of North Carolina are capable of supplying more than twice as many cords annually as are now consumed by all the pulp and paper mills in the South of the United States.—A.P.-C.

White Water Surveys. C. M. Baker. Paper Trade J. 106, No. 18:44-46 (May 5, 1938).—A standard procedure for flow measurements of mill wastes is presented for consideration.—A.P.-C.

United States Patents on Paper Making. First Quarter, 1938. Clarence J. West. Paper Trade J. 106, No. 16:35-38 (April 21, 1938).—A list in numerical sequence of patents relating to pulp and paper making issued at Washington during Jan., Feb. and March, 1938.—A.P.-C.

Economic and Technical Aspects of Wood Pulp as a World Commodity. Robert B. Wolf. Paper Trade J. 106, No. 17:86-87 (April 28, 1938).—A brief discussion.—A.P.-C.

Southern Sulphate Industry Unfolding. Harry E. Weston. Paper Ind. 20: 157-202 (May, 1938).—Detailed illustrated descriptions of the mills of Container Corp. of America at Fernandina, Fla., Brunswick Pulp and Paper Co. at Brunswick, Ga., and North Caroline Pulp Co. at Plymouth, N. C.—A.P.-C.

Hinde and Dauch Mills Improved. Arch Crossley. Pulp Paper Mag. Can. 39:399-404 (May, 1938).—A description of the new water conditioning, steam generating, and stock preparing equipment at the Toronto plant of Hinde and Dauch Paper Co. of Canada, Ltd.—A.P.-C.

Modern Plant for Preparing Old Paper Stock at the Heald Mill. J. D. Haskell. Paper Mill 60, No. 49:15-17 (Dec. 4, 1937).—A description of the stock-preparing plant at the 100-ton Heald paper mill of the Mead Corp., at Lynchburg, Va.—A.P.-C.

New Literature

A new booklet issued by the Noble & Wood Machine Company, Hoosick Falls, N. Y., for the pulp and paper industry, describes the company's propellers, now in use in over 599 mills, for constant agitation, color mixing, uniform stock blending and other varied uses.

A new revised booklet issued by The Riverside Metal Company, Riverside, N. J., contains fundamental information and data on recent developments in the production of Riverside phosphor bronze. Standard and unusual applications are illustrated to assist consumers interested in the use of phosphor bronze.

In a new bulletin issued by William C. Nash & Son, Neenah, Wis., the Nash encased vacuum roll is described. It is stated to secure highest efficiency in water extraction without impairing the life of felts. It can be used ahead of the breast roll for fresh water removal or following the breast roll in the position of a forming table.

Pump speed governors, is the subject of a new bulletin, No. 201-B, just issued by the Mason-Neilan Regulator Company, 1190 Adams street, Boston. Its uses include the automatic maintainance of uniform speed of single or duplex, direct acting steam pumps, all classes of flywheel pumps, vacuum pumps, and air compressors.

Bulletin No. 3802 Rev. 1, just issued by the Taber Instrument Company, North Tonawanda, N. Y., describes the improved Taber V-5 stiffness gauge. This instrument is designed for the accurate measurement of the stiffness quality of paper, light metallic sheet and wire. It is light in weight, portable and can be used anywhere.

Volume 4, 1939, issue of the *Waco Catalyst*, issued by the Wilkens-Anderson Company, 111 Canal street, Chicago, Ill., describes the new Ainsworth balances, Cameron pH Meter, other laboratory equipment and supplies handled by the company.

To Hold Conference at Appleton

The annual conference for executives of member mills of the Institute of Paper Chemistry will be held in Appleton, Wisc., on Thursday and Friday, May 18 and 19. The meeting of the Board of Trustees will be held on the evening of Wednesday, May 17.

While a detailed program for the conference has not been released, it is known that Dr. G. A. Borgese will be the principal speaker at one of the banquets.

Dr. Borgese is professor of Italian Literature of the University of Chicago. During the latter part of the World War and in the period immediately following, Dr. Borgese was extremely active in Italian national and international affairs. Among other things, he organized the Congress and Pact of Rome among nations of Hapsburg Monarchy in April 1918. Subsequently he was the head of the Italian delegation to the Interallied Conference in London. He was leader of democratic opinion in Italy for the League of Nations and New Europe. As a result of his opposition to Nationalism and Fascism he left Italy in 1931.

While Dr. Borgese has written rather extensively in Italian, his only English publication is Goliath, the March of Fascism, published in 1937. An excellent speaker, it is anticipated that his observations on current affairs will prove to be very interesting.

A New Conductometric Method for Analyzing Kraft Liquors*

By E. R. Whittemore,[1] & [2], S. I. Aronovsky,[2] and D. F. J. Lynch[2]

Abstract

A simple rapid conductometric apparatus for the analysis of pulping liquors and for general laboratory use has been developed. The ordinarily elaborate conductivity apparatus has been replaced with simple radio-type equipment using ordinary lighting current. The data are obtained by plotting the volume of titrating agent against the milliammeter readings taken at constant voltage.

Each constituent gives a line of characteristic slope and shape, and the junctions of these lines indicate the titration endpoints.

Curves of typical titrations are given to illustrate the large variety of uses to which this method may be put. Conductivity curves of the inorganic constituents of kraft liquor both individually and in mixtures are shown. The results have been checked by the usual chemical analytical methods with good agreement.

This method should prove useful both in control and research work because it affords a saving in time and chemicals. The apparatus involved is inexpensive and the procedure does not require extensive technical training on the part of the operator.

Conductometric titration is a thoroughly established physico-chemical procedure, and is widely different from the more commonly used potentiometric procedure in principle and application. The conductometric method provides information often obtained otherwise only with difficulty, and has been used extensively in advanced fundamental research.

The principles involved are given in detail by Britton *(2)*, Kolthoff *(7)*, and others. The electrical conductivity of a solution depends upon the concentration and mobility of the ions present. Chemical reactions can be measured by conductometric titration if there is a variation in the rate of change in conductivity at the beginning and at the end of the reaction. Any difference is clearly evident if the conductivity values are plotted against the volume of the titrating agent used. The graphs are principally straight lines and often afford, by their position, slope, and shape, a means of identifying the reaction and chemicals involved. The projection of the curve on the titration axis affords a quantitative measure of the various chemicals present.

Heretofore this useful method has found only limited application because a simple, rapid procedure, using inexpensive apparatus has not been available for general laboratory use. The usual forms of conductometric apparatus are based on the Wheatstone bridge principle, employing 1000 cycle frequency and rather elaborate, expensive equipment for bridge balance, resistance readings, and temperature compensation. Several adjustments are required for each reading, and the readings, tediously obtained from resistance measuring devices, must be converted to specific conductance values.

The conductometric titration apparatus developed in the U. S. Agricultural By-Products Laboratory at Ames, Iowa, *(9, 11)* is based on the principle that a current flowing at a constant potential through a solution is directly proportional to the conductivity of the solution. The apparatus consists of a few pieces of inexpensive radio-type equipment and employs 60 cycle lighting current. A single adjustment to constant potential is all that is required for a

FIG. 2.
The Assembled Conductometric Apparatus.

* Presented at the Fall Meeting of the Technical Association of the Pulp and Paper Industry, Green Bay, Wis., Sept. 8-12, 1938.

[1] Member TAPPI, Research Chemical Engineer.

[2] Agricultural By-Products Laboratory, established by the Bureau of Chemistry and Soils, U. S. Department of Agriculture, in cooperation with the Iowa State College, Ames, Iowa.

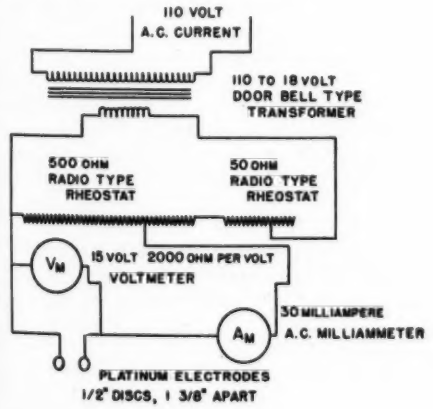

FIG. 1.
Diagrammatic Sketch of the Electrical Circuit for the Conductometric Apparatus.

direct numerical reading, which can be plotted to obtain the titration curve. While specific conductance values may be calculated from these data, they are unnecessary because the titration end points may be obtained directly from the plotted curves.

Equipment and Titration Procedure

The apparatus and titration procedure have been described in detail in previous publications *(9, 11)*. Briefly, the common 110 volt, 60 cycle lighting current is reduced to 6 to 8 volts and applied to platinum electrodes immersed in the solution to be titrated. A constant voltage, as read on a high resistance voltmeter, is maintained by means of a coarse and a vernier rheostat, and the corresponding current is indicated by a milliammeter. The readings are plotted as ordinates against cubic centimeters of titrating agent as abscissae. In the following discussion allusion to a curve or curve segment as a quantitative measure of a particular component refers to the projection of this curve or segment on the horizontal axis.

The design and construction of the apparatus are shown in detail in Figs. 1 and 2.

Typical Conductometric Data

Typical acid-base neutralization curves are shown in Fig. 3. (The curves in Figs. 3 to 10 are derived from readings taken at 0.5 to 1.0 cc. intervals, which are too close to be indicated clearly on these curves. The actual plotting of the data is illustrated in Fig. 10.) Curve A, Fig. 3 indicates the titration of a strong base with a strong acid, while curve B shows the reverse procedure. The titration of a weak acid

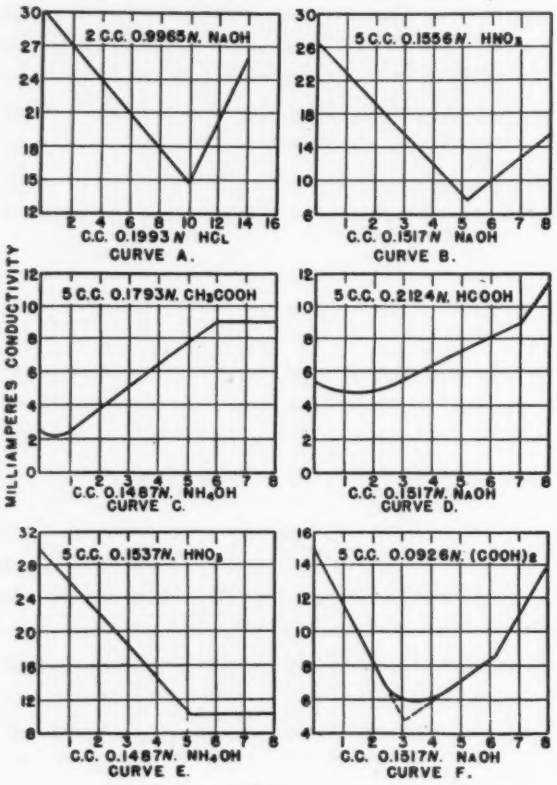

FIG. 3.
Typical Acid-Base Titration Curves

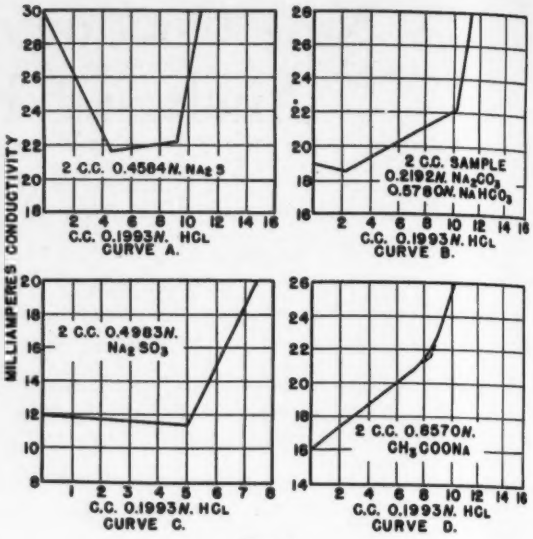

FIG. 4.
Typical Titrations of Alkaline Salts with Acids.

with a weak base is shown in curve C; the short, sharp curve grading into a straight line is characteristic of acetic acid, and the horizontal portion beyond the endpoint is typical of ammonium hydroxide titrations. The neutralization of a weak acid (formic acid) with a strong base is shown in curve D, and it may be noted that the initial curve is less sharp and longer than in the case of acetic acid. Curve E shows the titration of a strong acid with a weak base. In the titration of a dibasic acid (oxalic acid) with ammonium hydroxide, the marked difference between the two titratable hydrogen ions is shown in curve F. It is interesting to note that while there is no sharp break at the complete neutralization of the first hydrogen ion, the intersection of the projected straight-line slopes before and after this point offers a dependable endpoint for this ion.

The curves obtained by the acid titration of alkaline salts are shown in Fig. 4. In the titration of sodium sulphide with hydrochloric acid, curve A, the sharply descending slope shows the strongly alkaline character of the first sodium ion, while the nearly horizontal portion of the curve indicates the decomposition of the sodium hydrosulphide. The titration of commercial sodium bicarbonate is shown in curve B; the initial descending slope, not present in titrating pure sodium bicarbonate, is due to the presence of sodium carbonate. In the titration of sodium sulphite, only the first sodium ion is determined by this method, as indicated in curve C, because the addition of hydrochloric acid beyond this point results merely in increasing the number of hydrogen ions. The titration of sodium acetate, shown in curve D, yields an ascending curve with no sharp break, but the intersection of the straight-line slopes indicates the endpoint of the titration.

Curves typical of precipitation reactions are given in Fig. 5. In curve A, indicating the precipitation of oxalic acid with calcium hydroxide, the break in the descending line is not the midpoint of the titration but is due to a precipitation-pH phenonenon *(11)*, since both hydrogens are replaced by calcium. A delayed precipitation effect is indicated in curve B, which shows the titration of sodium sulphate with

barium chloride; the endpoint of this titration is determined by the intersection of the projected straight-line slopes. In the precipitation of sodium chloride with silver nitrate, curve C, and of potassium chromate with lead nitrate, curve D, straight-line curves with sharp endpoints are obtained. This is also true in the precipitation of sodium sulphide with mercuric chloride, curve F, a typical double decomposition reaction. When mercuric chloride is precipitated with sodium thiosulphate curve E, a straight-line curve with a sharp endpoint is also obtained, but in this case the reaction is due to the formation of a complex, according to the following equation:

$$3\ HgCl_2 + 2\ Na_2S_2O_3 + 2H_2O \longrightarrow 2\ HgS \cdot HgCl_2 + 2\ Na_2SO_4 + 4HCl \quad (1)$$

Kraft Liquor Analysis

The kraft process is one of the principal industrial pulping processes and is an established method for producing strong pulps for wrapping paper, board, and similar materials. The kraft pulp industry is expanding rapidly and the product is finding a broader application in the field of bleached pulps of high strength.

The commercial existence of the alkaline pulping processes depends upon the recovery of the expensive sodium salts. The used pulping liquor is evaporated, the concentrated material is calcined and smelted, and the molten salts are dissolved in water or in weak caustic liquor and then causticized with lime. In the kraft process the loss of sodium sulphide is compensated by the addition of salt cake (sodium sulphate) prior to smelting, and the loss of other sodium salts is made up by the addition of soda ash prior to causticizing. Analytical control is essential to these processes in order to reduce these chemical losses and costs to a minimum, as well as to secure optimum conditions of operation.

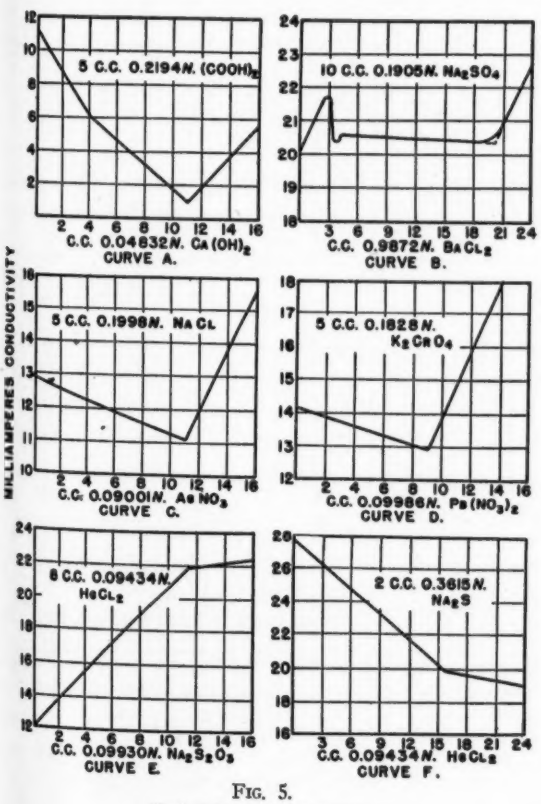

FIG. 5.
Typical Precipitation Curves

The methods of kraft liquor analysis in common American practice are those of Sutermeister *(10)*, Kress *(8)*, Cirves *(3)*, and Heath, Bray, and Curran *(5)*. Experience with these colorimetric methods has shown that the endpoints are obscure and indefinite. This is due to the presence of dark colored organic extracts and indicator-like substances, and to the reducing action of organic matter on iodine or other oxidizing agents. Back titration is usually necessary to secure good results in iodometric procedures. Heath, Bray, and Curran proposed the ammonium chloride distillation method to eliminate some of the difficulties, but the procedure and equipment are rather involved. Heath *(4)* reported that potentiometric titrations are also unsatisfactory.

A modified kraft process has been applied to the pulping of cereal straws in this laboratory *(12)*. The transition of this work from laboratory to commercial scale pulping requires extensive research on recovery, cost and optimum conditions; analytical control is very essential for these investigations. Preliminary experimental studies indicated the possibilities of conductometric titration for analyzing the spent kraft liquor from such agricultural materials.

It is generally known that the principal inorganic constituents of kraft liquor are the hydroxide, sulphide, carbonate, sulphite, thiosulphate and sulphate of sodium. Each individual constituent has a titration line of definite shape and slope. It was necessary to determine the position of each of these lines in the composite titration curve of the mixture and also the possible interference of the various components present in the original liquor or formed during the titration.

Experimental Data and Discussion

Titration of Individual Components.

Typical titration curves of the individual components are shown in Fig. 6, curves A to G. Curve A indicates the amount of carbonate present in the sodium hydroxide used. This carbonate is indicated by the line AF, the initial line AC being due to the formation of bicarbonate, while CF results from the decomposition of this bicarbonate. This is shown more clearly in curve B, obtained by the analysis of a solution of sodium carbonate of C.P. grade. In the sodium sulphide curve (C) the line AC indicates the formation of the hydrosulphide, and CD, the decomposition of the latter salt. The sodium sulphite was titrated only to the bisulphite stage, line DE, curve D. The titration of sodium acetate with hydrochloric acid, indicated in curve E, does not give a sharp endpoint as has been previously shown in curve D, Fig. 4. The precipitation of sodium sulphate with barium chloride is shown in curve G, and affords a convenient substitute for the usual gravimetric procedure.

The lower line in curve F shows the titration of mercuric chloride with sodium thiosulphate in which as previously mentioned a mercuric sulphide-mercuric chloride complex is formed, accompanied by the formation of the highly conductive sodium sulphate and hydrochloric acid. In the actual titration of kraft liquor, however, the thiosulphate is titrated with mercuric chloride and the results are indicated by the upper line of this curve. Other complexes

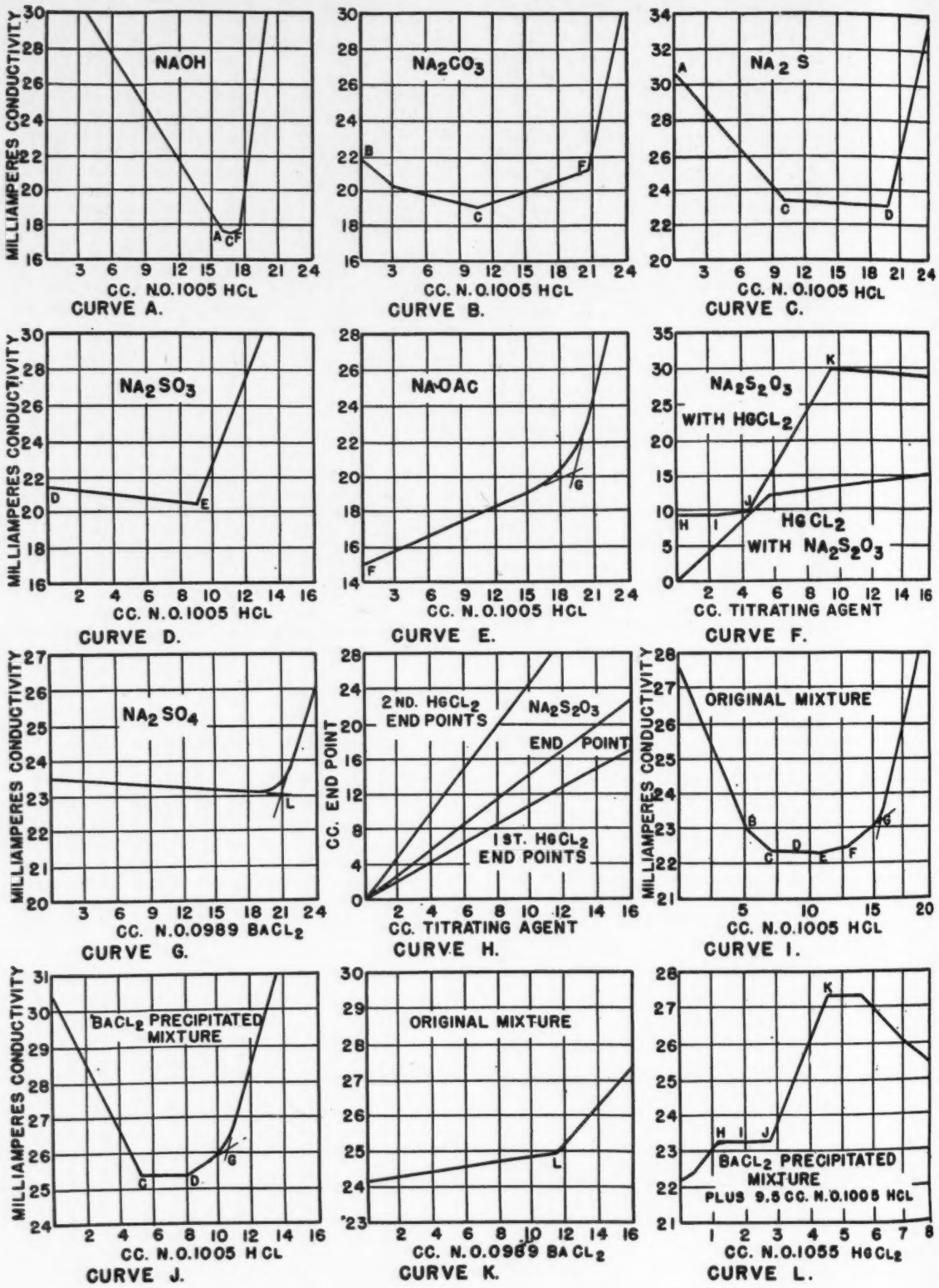

FIG. 6.
Conductometric Analysis of the Inorganic Components of Kraft Liquor.

are formed to point J and then the above mentioned complex is formed along the line JK. The line beyond K is due to excess of mercuric chloride.

Since more than one mercuric chloride-mercuric sulphide complex is formed with the preferred order of titration (thiosulphate titrated with standard mercuric chloride), a simple stoichiometric relation is not to be expected. The J and K endpoints, curve F, were plotted for varying amounts of sodium thiosulphate over the practical range of titration, and the results are given in the lower and upper lines, respectively, of curve H. Since the lines obtained are straight, indicating a constant proportionality, it is apparent that the thiosulphate content of a liquor may be obtained directly by the use of factors indicated by either the upper or the lower line, corresponding to K and J, respectively. The weight of mercuric chloride multiplied by the factor 0.9855 for the J endpoint, or by 0.4425 for the K endpoint, indicates the amount of sodium thiosulphate present in the sample. These factors were calculated from the experimental data.

The middle line of curve H was obtained by titrating mercuric chloride with thiosulphate, and the straight-line graph indicates the formation of the complex, $2HgS \cdot HgCl_2$, in stoichiometric proportions.

Titration of Mixtures of Pure Chemicals.

A mixture of sodium hydroxide, sulphide, carbonate, sulphite, acetate, sulphate and thiosulphate (a "synthetic" kraft liquor), Fig. 6, curve I, titrated with hydrochloric acid, results in a U-shaped curve

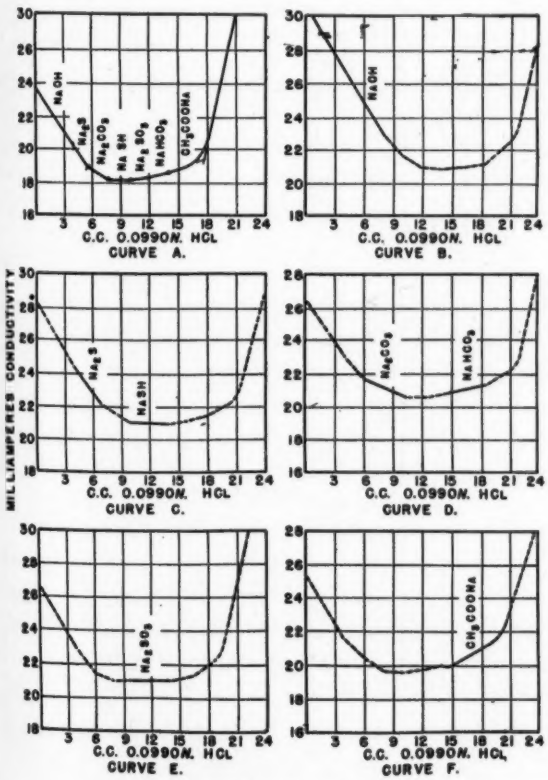

Fig. 7.

The Effect of Adding the Individual Inorganic Components to Kraft Liquor. Note: The Extension due to the added substance is the indicated increased length of the solid line.

built up mainly of straight lines. The letters in this curve are the same as those used in the individual titration curves and represent the endpoints of the individual components of the liquor. The line to B measures sodium hydroxide plus half of the sodium sulphide; BC measures half of the total carbonate; CD indicates the second half of the sodium sulphide, as confirmed by the acid titration of the filtrate after precipitation with barium chloride, curve J; the second half of the sodium carbonate is indicated by the line EF; the formation of bisulphite from sodium sulphite is measured by the line DE which is obtained by subtracting lines CD plus EF from the line CF (these positions were confirmed by the addition of known amounts of the various components, as shown later); the line FG is readily recognized from its shape and slope as due to sodium acetate; and the line beyond G is due to excess of hydrochloric acid. Sodium sulphate and thiosulphate do not appear in this curve because they are not affected by hydrochloric acid up to this point.

In the determination of the active alkali of kraft pulping liquors, a simplified procedure for mill control work is the precipitation of a sample of the liquor by a slight excess of barium chloride, and titration of the filtrate with standard hydrochloric acid. This titration is indicated in curve J, Fig. 6, in which the line to point C measures sodium hydroxide plus one-half of the sodium sulphide, and CD the second half of the sodium sulphide. The line DG measures the sodium acetate content of the liquor.

The sodium sulphate content of the liquor is determined by titrating a sample of the original liquor with standard barium chloride. Curve K, Fig. 6, indicates the precipitation of sodium carbonate, sulphite, and sulphate, and the latter is obtained by difference since the carbonate and sulphite content are already known from curves I and J.

The sodium thiosulphate may be obtained directly by the mercuric chloride titration. A sample of the original liquor is precipitated with barium chloride and the filtrate is acidified to the red-orange endpoint of methyl orange, pH 3.5, prior to titration with standard mercuric chloride. The plotted data in curve L show the precipitation of hydrogen sulphide to point H, beyond which the curve parallels the upper line of curve F.

Direct conductometric titrations of sodium sulphide, sodium sulphite, and sodium thiosulphate with iodine did not prove satisfactory as no definite endpoints could be obtained.

The Effect of the Addition of Individual Components to the Mixture.

To confirm the position of the lines representing individual components in a definite mixture of pure chemicals, Fig. 7, curve A and to determine possible interference between the various components, known volume equivalents of sodium hydroxide, 4.5 cc., curve B; sulphide, 3.8 cc., curve C; carbonate, 4.8 cc., curve D; sulphite, 4.0 cc., curve E; and acetate, 2.5 cc., curve F, were added to samples of a mixture of known proportions of these components. Comparing the succeeding curves with curve A, it may be seen that the line ascribed to each component is extended by the amount of this component added. (In the case of sodium sulphite only half of this component is indicated in the titration.) This

established the position of the components of the mixture in the curve and indicated that no interference occurred either from the original components or from the products formed during the titration.

The Titration of Commercial Kraft Liquors

Four commercial kraft liquors (white liquor, smelter green liquor, black liquor, and evaporated black liquor) were analyzed individually by the following steps: A titration of the original mixture with hydrochloric acid; a titration with hydrochloric acid of the filtrate from the barium chloride precipitation of the liquor; and a mercuric chloride titration of this filtrate following adjustment with hydrochloric acid to the red-orange endpoint, pH 3.5, of methyl orange, Fig. 8.

The acid titration of the white liquor, Fig. 8, plate A, indicated that the principal constituents were sodium hydroxide and sulphide, and that a small amount of carbonate was present. The acid titration of the barium chloride filtrate indicated, clearly, the presence of only sodium hydroxide and sulphide. The mercuric chloride titration showed the absence of sodium thiosulphate.

The acid titration of the green liquor, Fig. 8, plate B, indicated a small amount of sodium hydroxide, a larger amount of sodium sulphide, a large amount of sodium carbonate, and some sodium acetate. The acid titration of the barium chloride filtrate indicated only hydroxide and sulphide. The sodium acetate indicated by the first titration may have been largely organic salts, other than sodium acetate, which are precipitable by barium chloride. No thiosulphate was found by the mercuric chloride titration.

The acid titration of black liquor, Fig. 8, plate C, indicated a small residue of sodium hydroxide and sulphide and larger amounts of carbonate and acetate. The amounts of hydroxide, sulphide, and acetate were confirmed by the acid titration of the barium chloride filtrate. The titration with mercuric chloride indicated the presence of a small amount of thiosulphate.

The titration of the evaporated black liquor, Fig. 8, plate D, showed that practically no change in proportionate composition occured during the concentration of the liquor.

The Effect of Adding Individual Inorganic Components to Commercial Kraft Black Liquor.

The results of titrating samples of commercial kraft black liquor to which definite amounts of each component had been added in turn are indicated by the curves in Fig. 9. The solid line of curve A shows the acid titration of commercial kraft black liquor. The dotted line shows the acid titration of the barium chloride filtrate of the same liquor; alcohol was substituted for part of the water to overcome the increase in conductivity due to the barium chloride, so that the same amount of original sample could be used. The addition of known equivalents of sodium hydroxide, 10 cc., curve B; sulphide, 9.4 cc., curve C; carbonate, 10 cc., curve D; sulphite, 9.4 cc., curve E; acetate, 9.0 cc., curve F; and sulphate, 6.0 cc., curve H to the black liquor, as well

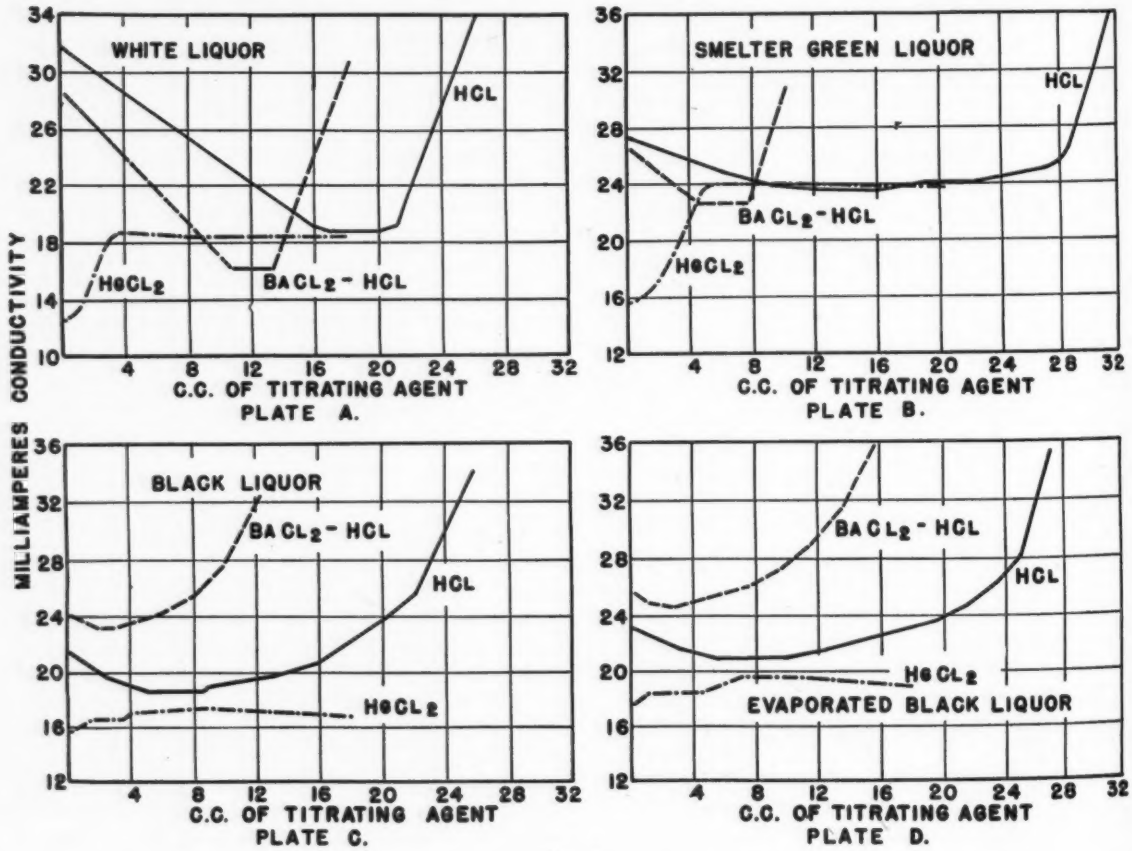

Fig. 8.
The Complete Analysis of Commercial Kraft Liquors.

as that of sodium thiosulphate to the filtrate of the black liquor treated with barium chloride, extends the respective lines of the individual components in their proper relative positions. The incomplete representation of the added sodium hydroxide, curve B and sodium sulphide, curve C is probably due to the presence of acidic compounds, such as sodium bicarbonate, and organic salts in the original black liquor. There is no evidence of interference from the other materials present, the results thus paralleling those obtained with "synthetic" white liquor.

Comparison of Chemical and Conductometric Titrations

The most direct comparison of the chemical and conductometric methods of analysis is probably the numerical comparison of endpoints. Referring to Table I, the hydrochloric acid titration of the known mixture of pure chemicals, no direct endpoint is found by either method for sodium hydroxide. The conductometric titration, however, differentiates between the first half of the sulphide and the first half of the carbonate, and also between the first half of the carbonate and the hydrosulphide, while the ordinary titration using phenolphthalein indicates only

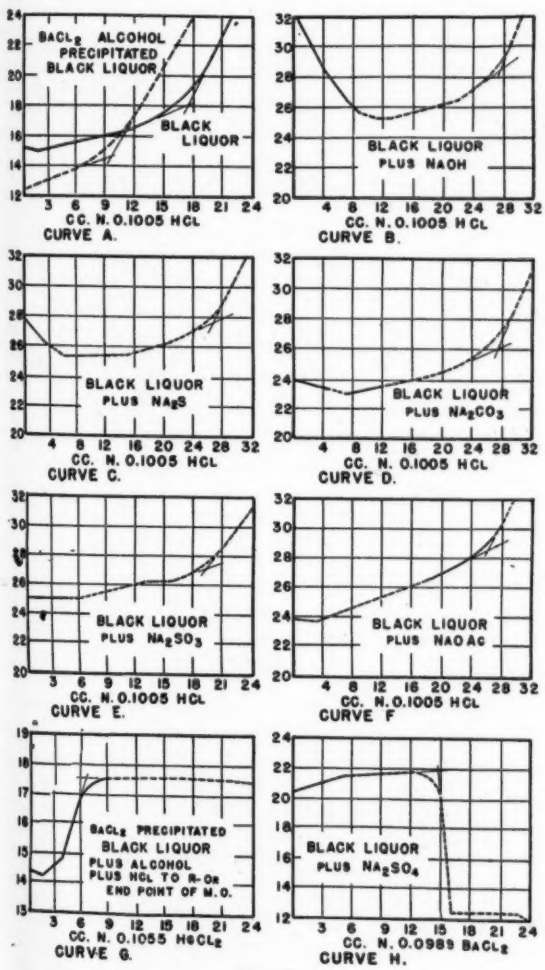

FIG. 9.

The Effect of Adding the Individual Components to Commercial Kraft Black Liquor.

TABLE I.—CONDUCTOMETRIC VERSUS CHEMICAL ANALYSIS OF KRAFT LIQUOR. TITRATION OF ORIGINAL LIQUOR WITH HYDROCHLORIC ACID.

No.	Component Description	Volume HCl Required: Calculated, cc.	Found: Conductometric, cc.	Found: Chemical, cc.
1	NaOH	3.51	....	....
2	½ Na_2S	1.82	....	....
3	(1 + 2)	5.33	5.35	....
4	½ Na_2CO_3	1.95	....	....
5	½ Na_2CO_3 from NaOH	.17	....	....
6	(3 + 4 + 5)	7.45	7.40	7.65
7	½ Na_2S (NaSH)	1.88	....	....
8	(6 + 7)	9.33	9.30	....
9	½ Na_2SO_3	1.71	....	....
10	(8 + 9)	11.04	11.10	....
11	½ Na_2CO_3 ($NaHCO_3$)	1.95	....	....
12	½ Na_2CO_3 ($NaHCO_3$) from NaOH	.17	....	....
13	(10 + 11 + 12)	13.16	13.10	....
14	CH_3COONa	3.58	....	....
15	(13 + 14)	16.74	16.90	16.00

the total of the hydroxide plus half of the sulphide plus half of the carbonate. The next two conductometric endpoints resulting from the formation of bisulphite and decomposition of bicarbonate are not distinct, but the endpoint between bicarbonate and acetate may be ascertained with reasonable accuracy. The conductometric endpoint of the sodium acetate titration, which is also that of the total titration, is well defined. The colorimeteric acid titration of sodium acetate, using methyl orange as the indicator, yields a premature and indefinite endpoint.

Table II shows the advantage of conductometric titration in yielding three dependable endpoints: one for hydroxide plus half of the sulphide, another for the second half of the sulphide, and the third for the acetate and the end of the titration. The usual colorimetric indicators show but one dependable endpoint.

TABLE II.—CONDUCTOMETRIC VERSUS CHEMICAL ANALYSIS OF KRAFT LIQUORS. TITRATION WITH HYDROCHLORIC ACID OF THE FILTRATE FROM THE PRECIPITATION OF KRAFT LIQUOR WITH BARIUM CHLORIDE.

No.	Component Description	Volume HCl Required: Calculated, cc.	Found: Conductometric, cc.	Found: Chemical, cc.
1	NaOH	3.51	....	....
2	½ Na_2S	1.82	....	....
3	(1 + 2)	5.33	5.30	5.40
4	½ Na_2S (NaSH)	1.88	....	....
5	(3 + 4)	7.21	7.30	....
6	CH_3COONa	3.58	....	....
7	(5 + 6)	10.79	10.80	9.00

It is evident from the data in the tables and from the preceding figures that the conductivity method for analyzing kraft liquors is superior to the usual chemical procedures in speed and simplicity, and is fully equal to the chemical methods in accuracy. By the use of this method the selection of specific indicators and the difficult observance of color changes in dark, turbid solutions are avoided.

Proposed Procedure for the Analysis of Kraft Liquors

The size of the diluted sample to be used for analysis varies with the type of liquor and the concentration of the electrolytes present. The liquor to be analyzed is diluted with boiled distilled water, free from carbon dioxide, in the ratio of 1:10. A volume sufficient to show a conductance of 15 to 30 milliamperes on further dilution to 200 cc. is used for the titration. The electrodes and a mechanical stirrer are placed in the titrating vessel in a manner to insure complete submergence of the electrodes during the titration. The relative position of the electrodes in the vessel *must remain fixed* during the test to avoid changes in conductivity induced by alter-

ing this position. A selected potential in the range of 6 to 8 volts is applied to the electrodes, and is maintained constantly at the selected value by rheostat adjustment for each reading on the milliammeter. The two electrical readings should be taken practically simultaneously.

The titrating agent, approximately 0.1 normal, is added to the vessel from a burette in 0.5 to 2 cc. increments, depending upon the accuracy desired. Sufficient time must elapse prior to each reading to allow the solution to reach equilibrium. The end of the titration is reached when the rate of change in conductivity for four or five successive readings is that characteristic of the titrating agent. Indicators added to the solution, especially in acid-base titrations, are helpful in approximating the endpoints of the titration.

The milliammeter readings are plotted as ordinates and the cubic centimeters of titrating agent as abscissae on the usual types of coordinate paper. The points should be connected with a straight line wherever possible; the remaining points may be connected by suitable curves. The intersections of the straight-line slopes are taken as the endpoints of the titration of the individual components.

Recording and Plotting the Data

Typical conductometric titrations of kraft liquor are given in Table III and Fig. 10 to illustrate the technique of recording and plotting the data. With a little experience a complete analysis of kraft liquor, including plotting and calculation of the data may be made in about an hour. The conductometric determination of the active alkali for control work is more accurate and rapid than the usual indicator titration method.

Summary

A simple, practical procedure and inexpensive apparatus for conductometric titrations have been developed. With this apparatus the conductivity of solutions is indicated directly on a milliammeter; involved calculations are thus avoided.

The application of the method to the determination of acids, bases, and salts is illustrated by typical graphs.

The parts of a titration curve representing individual components in a complex mixture of inorganic ions can be identified in the complete titration curve of the mixture by their slope, relative position and shape. With miliamperes as ordinates and cubic centimeters of titrating agent as abscissae, the horizontal projections of sections of the composite curve afford a quantitative measure of the individual components present in the mixture.

The conductometric titration method has been applied to the analysis of kraft liquors with excellent results. This method effects a material saving of time, and the results are as reliable as those obtained by the tedious, involved, chemical procedure.

This method affords a means for the analysis of kraft black liquor or other dark and turbid solutions.

This method is suitable for the rapid determination of the active alkali content of pulping liquors for routine control work in the kraft pulp mill.

The proposed method for the conductometric analysis of kraft liquors is given in detail.

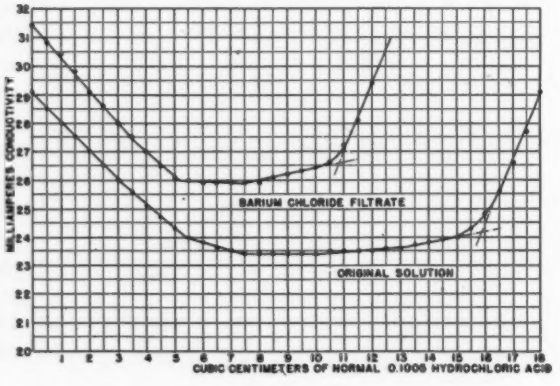

FIG. 10.
Detailed Titration Curves of "Synthetic" Kraft White Liquor.

TABLE III.—CONDUCTOMETRIC TITRATION OF "SYNTHETIC" KRAFT WHITE LIQUOR.
(E. M. F. = 7.8 volts).

Original Liquor			Barium Chloride Filtrate		
0.1005 *N* HCl cc.	Conductivity X10 milliampere	Colors with universal indicator (6)	0.1005 *N* HCl cc.	Conductivity X10 milliampere	Colors with universal indicator (6)
0.0	291	purple			
0.5	285	.....	0.0	314	purple
1.0	280	.....	0.5	308	.....
1.5	275	.....	1.0	304	.....
2.0	270	.....	1.5	298	.....
2.5	265	.....	2.0	291	.....
3.0	260	.....	2.5	286	.....
3.5	256	.....	3.0	280	.....
4.0	251	.....	3.5	275	.....
4.5	247	.....	4.0	270	.....
5.0	243	.....	4.5	265	.....
5.5	240	.....	5.0	261	.....
6.0	238	.....	5.5	260	blue
6.5	236	.....	6.0	259	green
7.0	235	red-violet	6.5	259	yellow-green
7.5	234	blue	7.0	259	yellow
8.0	234	green	7.5	259	.....
8.5	234	.....	8.0	259	orange
9.0	234	yellow-green	8.5	261	orange-red
9.5	234	.....	9.0	262	red
10.0	234	.....	9.5	263	.....
10.5	235	yellow	10.0	264	.....
11.0	235	.....	10.5	266	.....
11.5	235	.....	11.0	272	.....
12.0	235	.....	11.5	281	.....
12.5	236	yellow-orange	12.0	294	.....
13.0	236	orange			
13.5	237	.....			
14.0	238	orange-red			
14.5	239	.....			
15.0	240	red			
15.5	243	.....			
16.0	248	.....			
16.5	256	.....			
17.0	266	.....			
17.5	277	.....			
18.0	291	.....			

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Irving Trust Co., *Schodack,* Havre, 111 bls. rags.
———, *Schodack,* Havre, 23 bls. rags.
W. J. Green, Inc., *Schodack,* Havre, 37 bls. rags.
Richard Shipping Co., *Schodack,* Dunkirk, 34 bls. rags.
J. Cohen & Son Co., Inc., *Samaria,* Liverpool, 9 bls. rag cuttings.
———, *Samaria,* Liverpool, 23 bls. rags.
Chase National Bank, *Cameronia,* Glasgow, 77 bls. bagging.
The Barrett Co., *Cameronia,* Glasgow, 102 bls. bagging.
Manufacturers Trust Co., *Westernland,* Antwerp, 38 bls. rags.
———, *American Importer,* Manchester, 7 bls. thread waste.
E. Butterworth & Co., Inc., *American Importer,* Liverpool, 47 bls. old twine.
D. M. Hicks, Inc., *American Importer,* Liverpool, 45 bls. paper stock.
Hughes Fawcett, Inc., *Black Eagle,* Antwerp, 77 bls. rayon waste.

HIDE CUTTINGS, ETC.

———, *Samaria,* Liverpool, 532 bags hide cuttings.
———, *Hansa,* Hamburg, 60 bags bone glue (sheets).
Pioneer Import Corp., *Hansa,* Hamburg, 120 bags bone glue (sheets).

OLD ROPE

W. Steck & Co., *Black Tern,* Rotterdam, 62 coils.
Chase National Bank, *American Banker,* London, 142 coils.

CHINA CLAY

English China Clays Sales Corp., *Samaria,* Liverpool, 84 bags, 10 casks.

WOOD PULP

E. M. Sergeant Pulp & Chemical Co., *Bergensfjord,* Nygard, 125 bls. chemical pulp.
Chase National Bank, *Bergensfjord,* Oslo, 900 bls. bleached sulphite.
The Borregaard Co., Inc., *Bergensfjord,* Sarpsborg, 780 bls. unbleached sulphate, 300 bls. unbleached sulphite.
Absorbo Beer Pad Co., *Hansa,* Hamburg, 80 bls. wood pulp.
Castle & Overton, Inc., *Deutschland,* Hamburg, 2115 bls. wood pulp, 423 tons.
Absorbo Beer Pad Co., *Deutschland,* Hamburg, 120 bls. wood pulp.
Goldman Sachs & Co., *Laura C.,* Trieste, 706 bls. wood pulp.
Absorbo Beer Pad Co., *Weser,* Bremen, 400 bls. wood pulp.
Absorbo Beer Pad Co., *Westernland,* Hamburg, 314 bls. wood pulp, 34 tons.

WOOD PULP BOARDS

W. Bersch, *Westernland,* Hamburg, 400 bls.
———, *Westernland,* Hamburg, 48 bls. (sheets), 25 cases (sheets).
———, *Deutschland,* Hamburg, 41 bls. (sheets).

BOSTON IMPORTS

WEEK ENDING APRIL 22, 1939

R. C. Harvey Co., *Schodack,* Havre, 28 bls. rags.
Lucas Henkels, *Schodack,* Havre, 5 bls. rags.
———, *Schodack,* Havre, 40 bls. rags.
Darmstadt Scott & Courtney, *Schodack,* Dunkirk, 19 bls. pickers.
———, *Schodack,* Dunkirk, 24 bls. rags.
Lucas Henkels, *Schodack,* Dunkirk, 38 bls. rags.
Irving Trust Co., *Schodack,* Dunkirk, 81 bls. bagging.
———, *Black Eagle,* Antwerp, 45 bags oil bag scrap, 18 bls. rags, 14 bls. threadwaste.
International Purchasing Co., *Black Eagle,* Antwerp, 62 bls. old rope.
Chase National Bank, *American Banker,* London, 74 bls. waste paper.
American Express Co., *American Banker,* London, 3 cs. stencil paper, 20 bls. rags.
Stone & Downer Co., *American Banker,* London, 15 pkgs. printing paper.
H. Fuchs & Son, *American Banker,* London, 163 cs. pulp boards.
———, *American Banker,* London, 264 bls. waste paper.
Southworth Co., *American Banker,* London, 39 bls. rags.
Price & Pierce, Ltd., *Ragnhildsholm,* ———, 330 bls. bleached sulphite.

PHILADELPHIA IMPORTS

WEEK ENDING APRIL 22, 1939

J. M. Hagy Waste Works, *Black Tern,* Antwerp, 112 bls. rags.
Philadelphia National Bank, *Black Tern,* Antwerp, 78 bls. rags.
———, *Black Tern,* Antwerp, 30 bls. wrapping paper.
E. J. Keller Co., Inc., *Black Tern,* ———, 303 bls. rags.
F. Weber Co., *Schodack,* Havre, 1 cs. drawing paper
Castle & Overton, Inc., *Schodack,* Havre, 62 bls. rags.
Philadelphia National Bank, *Schodack,* Havre 4 bls. rags.
E. J. Keller Co., Inc., *Schodack,* ———, 66 bls. rags.
M. Sone, *Laura Co.,* Trieste, 332 bls. wood pulp.
———, *Laura Co.,* Trieste, 400 bls. wood pulp.
Price & Pierce, Ltd., *Lagaholm,* ———, 180 bls. bleached sulphite.

BALTIMORE IMPORTS

WEEK ENDING APRIL 22, 1939

Congoleum Nairn Co., *Schodack,* Havre, 982 bls. rags.
Parsons & Whittemore, Inc., *Schodack,* Havre, 35 rolls newsprint.
Washington Post, *Markland,* Liverpool, N. S., 2277 rolls newsprint.
Castle & Overton, Inc., *Black Eagle,* Rotterdam, 250 bls. wood pulp, 50 tons.
Price & Pierce, Ltd., *Lagaholm,* ———, 210 bls. bleached sulphite.

NORFOLK IMPORTS

WEEK ENDING APRIL 22, 1939

Champagne Paper Corp., *Schodack,* Havre, 350 cs. cigarette paper.

NEWPORT NEWS IMPORTS

WEEK ENDING APRIL 22, 1939

De Mauduit Paper Corp., *Schodack,* Havre, 1429 cs. cigarette paper.

DYESTUFFS

for BEATER, CALENDER or COATED PAPERS

CIBA COMPANY INCORPORATED NEW YORK

CIBA COMPANY, LIMITED MONTREAL, P. Q., CANADA

Representing Society of Chemical Industry in Basle, Switzerland, Successor to the Low Chemical Company, Incorporated

OFFICES 89 BEAVER STREET, NEW YORK

Knox felts

EXCELSIOR Knox Woolen Co. Camden, Me. FINE & FAST

HIGH POROSITY

. . . as a characteristic of a paper maker's felt will, not only add to the life of felt, but saves time lost on the machine due to excessive shut downs for washing. Specify

EXCELSIOR FELTS

and minimize this trouble. Made by the Knox Woolen Co., of Camden, Maine, since 1864.

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295 Madison Ave. New York, N. Y.

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Mundt

Perforated Screens For Pulp and Paper Mills

Steel, Copper, Brass Bronze, Monel Metal and Other Alloys Punched for Centrifugal and Rotary Screens, Pulp Washers, Drainer Bottoms, Filter Plates, etc.

Charles Mundt & Sons

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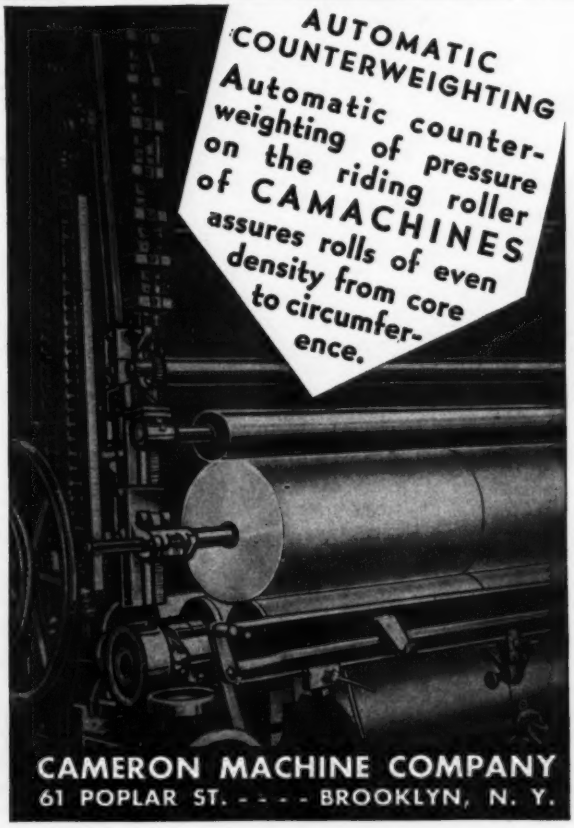
AUTOMATIC COUNTERWEIGHTING

Automatic counter-weighting of pressure on the riding roller of CAMACHINES assures rolls of even density from core to circumfer-ence.



CAMERON MACHINE COMPANY

61 POPLAR ST. - - - - BROOKLYN, N. Y.

New York Market Review

Office of the PAPER TRADE JOURNAL,
Wednesday, April 26, 1939.

Reports from many manufacturers' representatives, jobbers, and general paper merchants during the current week indicate that sales volume in the wholesale paper market is keeping up well, despite the slight decline in general business activity. Although consumer demand for some grades of paper is under trade expectations at this date, sales volume in practically all lines is reported running some fifteen per cent above that of this period last year. The long continued discussion of war and disturbing political and economic conditions in Europe, is generally conceded to have adversely affected security and commodity prices and the decline in market values in stocks and bonds has created lack of confidence in the future, apparently to a degree not justified by actual conditions. Too much emphasis appears to be placed on the possibility of war and too little confidence in the ability to avoid it. Confusion and an overcautious state of mind is reflected in business today.

Further decline in the general business activity of the country is indicated in the reports received of a slight decline to date. The index of general business activity for the week ended April 16 was 86.0 per cent, compared with 86.9 per cent for the previous week, and with 76.9 per cent for the corresponding period last year. Among the components forming this index, miscellaneous car loadings declined a little, automobile sales were a little lower, while the output of many grades of paper was over four per cent lower than for the preceding week.

The production ratio of over 200 paper mills for the week ended April 15, stood at 80.3 per cent, compared with 84.7 per cent for the previous week, and with 68.0 per cent for the corresponding week last year. Paper board production was 67.0 per cent for the like period, compared with 54.0 per cent for the corresponding week last year.

The newsprint market reflects no important change for the current week. Consumption is improving very slowly. Production of domestic mills is reported at about capacity, while some mills in Canada have curtailed production. The lower price, $48, per ton, asked by many domestic mills, against $50 per ton by Canadian mills, is cited as the probable cause for the stimulation of domestic production and a decline in Canadian output. The cause of the decline in advertising lineage, resulting in less pages issued by daily and Sunday papers is, of course, the major reason for the comparatively low rate of newsprint consumption at this date. Volume of tonnage is approximately 10 per cent lower than at this period last year.

No important change in the demand for many grades of paper has been reported this week. The market is firm and the sales volume of many grades of paper is reported as good in sulphite lines, in some groundwood grades and in tissues.

Kraft paper production and orders continues at a good level and while output is reported as running a little higher than orders at this date than earlier in the year, the balance between production and demand continues favorable. Consumption of kraft wrapping paper continues at a smaller volume than trade expectations, while the tonnage of grocery-bag kraft paper has increased of late more than is commonly regarded as normal. Volume is about 20 per cent higher than for the like period last year. Prices are firm and the inventory situation is satisfactory.

Paper board production continues good, despite a small decline in output below the peak of this year, and this market is firm and the trade prospect good.

Mechanical Pulp

The market situation in mechanical pulp is reported unchanged for this week. Prices are firm and the outlook is conceded to be good.

Chemical Pulp

No change in either demand or prices has been reported in chemical pulp for the current week. As mills are operating at a substantially higher production ratio than at this period last year, though 12.3 per cent lower than in the corresponding week in 1937, demand continues relatively good.

Old Rope and Bagging

Transactions in old rope continue on a limited schedule and this market is relatively quiet, with prices practically nominal at prevailing quotations. The demand for old bagging continues slow, with mills showing little interest at prevailing market quotations.

Rags

The demand for No. 1 white shirt cuttings continues active and prices on this grade are higher for this week and currently quoted at from 7.00 to 7.25. Exports to England on white rags continues active, and the trend in prices appears to be headed upward on only the higher grades. The foreign rag market in general is inactive and prices are nominal.

Old Waste Paper

No important changes in the old waste paper market has been reported this week. Prices continue steady on all grades and mills are buying in somewhat larger volume, and higher prices on No. 1 mixed paper is expected in some quarters of the trade. At this date, however, no definite upward trend in prevailing prices is apparent.

Twine

Little change in the market situation in twine has been reported for the week. Trading at this date is reported as fair, prices are firm and no change in prevailing market quotations has been reported on any grade of hard or soft fiber twine.

J. Andersen & Co.

Selling Agents

21 East 40th Street

New York

CHEMICAL & MECHANICAL PULP

Kraft Pulp

HERNÖSANDS ALA NYA AKTIEBOLAG
Södersand, Sweden
BALK TRÄINDUSTRI AKTIEBOLAG
Vansätterdon, Sweden
MUNKSUNDS AKTIEBOLAG
Munksund, Sweden
NORRSJÖ CELLULOSA A.-B.
Sprängsvikon, Sweden

Bleached Sulphite

KELLNER-PATERSON PAPER PULP CO., LTD.
Sarpsborg, Norway
Edsvalla, Sweden
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AKTIESELSKABET GREÅKER CELLULOSEFABRIK
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Södersand, Sweden
CELLULOSEFABRIKS A.-G.
Bratislava, Czecho-Slovakia
SVANÖ AKTIEBOLAG
Svanö, Sweden

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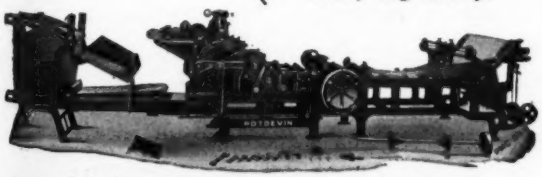
FOR SHOPPING BAGS

It is significant that practically every manufacturer of shopping sacks in the United States uses POTDEVIN sack machines. Dependability, high-speeds, low-cost operation and maintenance has proven to them the superiority of these POTDEVIN units.

Because of their long-range of bag sizes, POTDEVIN shopping sack machines are a profitable addition to any bag factory.

POTDEVIN shopping sack machines also produce charcoal, flour, poultry potato and meal sacks.



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ALSO PRINTING PRESSES, WAXING MACHINERY

POTDEVIN MACHINE CO.
1223 38th Street, Brooklyn, New York
Established 1893

THE DRAPER FELTS

All kinds and styles of Felts for all kinds and styles of Papers.

Write us about your Felt problems and let us help you reduce your Felt Costs—we will call anywhere at any time.

DRAPER BROS. COMPANY

CANTON, MASS.

Woolen manufacturers since 1836

ENGLISH ECCO CLAYS CLAYS

ECCO CLAYS
TRADE MARK

UNIFORM • SUPERIOR • DEPENDABLE

English China Clays Sales Corporation
551 Fifth Avenue, New York City

Miscellaneous Markets

Office of the PAPER TRADE JOURNAL,
Wednesday, April 26, 1939.

BLANC FIXE—Prices on blanc fixe continue firm and conform to prevailing market levels. The pulp is quoted at from $42.50 to $45 per ton, in bulk; the powder is offered at from 3½ to 3¾ cents per pound, in barrels, at works.

BLEACHING POWDER—Quotations on bleaching powder continue firm and unchanged at prevailing market prices. Bleaching powder is quoted at from $2 to $2.25 per 100 pounds, in drums, at works.

CASEIN—The demand for casein is reported as good for the current week. Standard domestic casein, 20-30 mesh, is currently quoted at from 7½ to 8 cents per pound; 80-100 mesh, at from 8 to 8½ cents per pound; all prices in bags, car lot quantities.

CAUSTIC SODA—Prices on caustic soda continue firm and unchanged at prevailing market quotations. Solid caustic soda is quoted at from $2.10 to $2.30 per 100 pounds; flake and ground at from $2.50 to $2.70 per 100 pounds, in drums, at works.

CHINA CLAY—Quotations on china clay are firm and continue unchanged at prevailing market levels. Domestic filler clay is quoted at from $6.50 to $12 per ton; coating clay at from $11 to $22 per ton, at mines. Imported clay is quoted at from $13 to $25 per ton, ship side.

CHLORINE—Prices on chlorine continue firm and conform to prevailing market quotations. Chlorine is currently quoted at $1.75 per 100 pounds, in single-unit tank cars, f.o.b., works.

ROSIN—The demand for rosin continues fair for the current week. Prices are a little lower than for the previous week. "G" gum rosin is currently quoted at $4.75; "FF" wood rosin at $4.10, per 280 pounds, gross weight, in barrels, at Savannah. Seventy per cent gum rosin size is quoted at $2.68 per 100 pounds, f.o.b., shipping point.

SALT CAKE—Quotations on salt cake continue firm and unchanged at prevailing market levels. Quotations range at from $12 to $13.50 per ton; chrome salt cake at from $11 to $12 per ton, f.o.b., shipping point. Imported salt cake is quoted at from $14.50 to $15 per ton, Gulf or Atlantic Seaboard, on dock.

SODA ASH—Prices on soda ash continue firm and unchanged at prevailing market quotations. Prices on soda ash in car lots, at works, per 100 pounds, are as follows: in bulk, $.90; in bags, $1.05; and in barrels, $1.35.

STARCH—The demand for corn starch is reported as a little less active for the current week. Prices are slightly higher. Globe pearl is currently quoted at $2.55 per 100 pounds; special paper starch at $2.65 per 100 pounds. All prices in bags, car lots, f.o.b., Chicago.

SULPHATE OF ALUMINA—Quotations on sulphate of alumina continue firm and conform to prevailing market prices. The commercial grades are quoted at $1.15; iron free at $1.30, per 100 pounds, in bags, car lot quantities, f.o.b., works.

SULPHUR—Prices on sulphur remain firm and conform to prevailing market levels. Annual contracts are quoted at $16 per long ton, f.o.b., mines. Spot and nearby car lots are quoted at $19 per ton.

TALC—Quotations on talc continue firm and conform to prevailing market prices. Domestic talc is offered at from $15 to $18 per ton, Eastern mines. Imported talc is quoted at from $20 to $40 per ton, on dock.

Market Quotations

Paper

(Delivered New York)

News, per ton—			
Roll, contract	$50.00	@	—
Sheets	58.00	@	—
Kraft—per cwt.—Delivered Zone A			
No. 1 Northern	$4.75	@	$5.25
Superstandard	4.12½	@	4.62½
Northern Standard Wrapping	4.00	@	—
Standard Wrapping	3.50	@	—
Tissues—Per Ream—Carlots			
White No. 1	.92½	@	—
White No. 1 M. G.	.90	@	—
White No. 1½	.67½	@	—
White No. 2	.60	@	—
Anti-Tarnish M. G.	.75	@	—
Colored	.87½	@	—
Kraft	.75	@	—
Manila	.60	@	—
Unbl. Toilet, 1 M.	3.20	@	—
Bleached Toilet	5.26	@	—
Paper Towels—			
Unbleached	1.80	@	—
Bleached	2.10	@	—
Manila—per cwt.—C. l. f. a.			
No. 1 Jute	7.75	@	9.75
No. 1 Manila Wrapping, 35 lb.	5.00	@	—
No. 2 Manila Wrapping, 35 lb.	4.75	@	—
Boards, per ton—			
News	30.00	@	32.50
Chip	30.00	@	32.50
Sgl. Mla. Ll. Chip	42.50	@	—
Jute Lined Chip	42.50	@	45.00
White Pat. Coated	55.00	@	57.50
Kraft Liners	45.00	@	—
Binders Boards	71.00	@	77.00

The following are representative of distributors' resale prices:

Rag Content Bonds and Ledgers—White, Assorted Items, Delivered in Zone 1:

	Bonds		Ledgers	
100% Rag Ext. No. 1	$39.10	@ $46.00	$40.25	@ $47.25
100% Rag	31.05	@ 36.50	32.20	@ 37.75
85% Rag	.....		29.90	@ 35.00
75% Rag	23.60	@ 27.75	24.75	@ 29.00
65% Rag	.....		31.65	@ 26.25
50% Rag	17.55	@ 21.50	18.70	@ 22.75
25% Rag	14.65	@ 17.75	15.80	@ 19.25

Colors at $1.00 cwt. extra.

Sulphite Bonds and Ledgers—White, Assorted Items, Delivered in Zone 1:

	Bonds		Ledgers	
No. 1	$8.60	@ $10.50	$9.75	@ $12.00
No. 2	7.70	@ 9.50	8.90	@ 10.75
No. 3	6.85	@ 8.25	8.00	@ 9.75
No. 4	7.00	@ 8.50	8.20	@ 10.00

Colors $1.00 cwt. extra.

Free Sheet Book Papers—White, Cased Paper, Delivered in Zone 1:

No. 1 Glossy Coated	$11.30	@	$12.75
No. 2 Glossy Coated	9.70	@	11.00
No. 3 Glossy Coated	8.60	@	10.00
No. 4 Glossy Coated	8.05	@	9.25
No. 1 Antique (watermarked)	8.05	@	9.25
No. 2 Offset	7.45	@	8.50
A Grade E. F.	7.20	@	8.25
A Grade S. & S. C.	7.45	@	8.50
B Grade E. F.	6.65	@	7.75
B Grade S. & S. C.	6.90	@	8.00
C Grade E. F.	6.40	@	7.50
C Grade S. & S. C.	6.65	@	7.75
D Grade E. F.	6.10	@	7.00
D Grade S. & S. C.	6.35	@	7.25

Ivory & India at $.50 cwt. extra.

Mechanical Pulp

(On Dock, Atlantic Ports)

No. 1 Imported—			
Moist	25.00	@	28.00
Dry	25.00	@	28.00
(Delivered)			
No. 1 Domestic and Canadian	29.00	@	31.00

Chemical Pulp

(On Dock, Atlantic, Gulf and West Coast Ports)

Bleached Sulphite (Domestic and Foreign)—			
Prime Bleached Sulphite	2.25	@	2.75
Prime Qualities—			
Easy-Bleaching Sulphite	1.90	@	2.00
Strong Unbleached Sulphite	1.80	@	1.95
(On Dock, Atlantic Ports)			
Kraft Bleached	2.50	@	2.75
Kraft Light & Strong	1.60	@	1.75
Kraft No. 1	1.45	@	1.60
Kraft No. 2	1.35	@	1.40
(F. o. b. Pulp Mill)			
Kraft Domestic	1.25	@	1.75
(Delivered)			
Soda Bleached	2.55	@	—

Add 60 cents per short ton, dock charges for Albany; $2.50 for Lake Ports East and $3.50 for Lake Ports West of Mackinac Straits.

Domestic Rags

New Rags

(Prices to Mill f. o. b. N. Y.)

Shirt Cuttings—			
New White, No. 1	7.00	@	7.25
Silesias No. 1	4.00	@	4.25
New Unbleached	6.75	@	7.00
Blue Overall	4.90	@	5.00
Fancy	2.00	@	2.15
Washables	1.50	@	1.60
Mixed Khaki Cuttings	3.00	@	3.25
O. D. Khaki Cuttings	4.00	@	4.10

Old Rags

White, No. 1—			
Repacked	2.90	@	3.15
Miscellaneous	2.10	@	2.25
White, No. 2—			
Repacked	1.50	@	1.60
Miscellaneous	1.25	@	1.40
Thirds and Blues—			
Repacked	1.30	@	1.40
Miscellaneous	1.15	@	1.20
Roofing Rags—			
No. 1	1.05	@	1.10
No. 2	.90	@	.95
No. 3 (bagging)	.55	@	.65
No. 4	.60	@	.65
No. 5A	.60	@	.65

Foreign Rags

New Rags

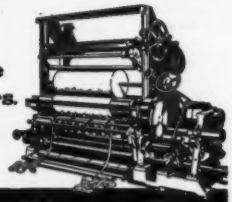
New Dark Cuttings	2.25	@	2.40
New Mixed Cuttings	2.00	@	2.20
New Light Silesias	5.50	@	5.75
Light Flannelettes	5.50	@	5.75
New White Cuttings	7.00	@	7.50
New Light Oxford	4.00	@	4.50
New Light Prints	3.00	@	3.25

Old Rags

No. 1 White Linens	7.50	@	8.50
No. 2 White Linens	6.50	@	7.50
No. 3 White Linens	4.50	@	—

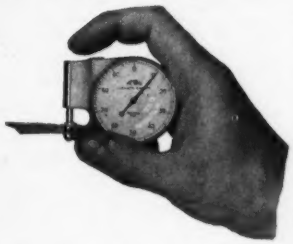
LANGSTON SLITTERS AND ROLL WINDERS

There is a type and size for every job—from tissue to heavy board—narrow to wide cuts—small to large diameters.
SAMUEL M. LANGSTON COMPANY, *Camden, N. J.*



—a Shear Cut—a Clean Cut.

AMES Thickness Measure No. 25



This compactly designed instrument (the only one of its kind made) meets every demand for a neat pocket gauge to measure thicknesses with speed and accuracy.

$10.50 fully guaranteed

B. C. AMES CO. WALTHAM, MASS.

CASEIN

Uniform Quality

Dependable Service

Special Types to Meet Unusual Requirements

CASEIN COMPANY OF AMERICA
DIVISION OF THE BORDEN COMPANY
350 Madison Avenue, New York, N. Y.
10 Years of Service to Users of Casein Products

WATERBURY FELTS

Are Made By

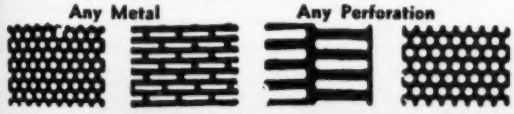
H. WATERBURY & SONS CO.
ORISKANY, NEW YORK

Pulp and Paper Mill Screens

Of Stainless Steel—Copper—Bronze—Monel—Chemical Resisting Alloys

Perforations that are accurate in size

Any Metal Any Perforation



The Harrington & King Perforating Co.
5652 Fillmore St., Chicago, Ill. 11 Park Pl., New York, N.Y.

FOR SALE

Single cylinder board mill making jacquard card. Within ten miles of Boston. Water power, steam and electricity. 4,000 lbs. 24 hours. Can make up to 54 caliper. Operated constantly since 1824.

ADNA C. DENISON 137 Newbury St.
Boston, Mass.
Telephone, KEN. 1650.

PULP MILL MACH'Y FINISHING ROOM MACH'Y
— FRICTION CLUTCHES —

The Moore & White Co.
Philadelphia, Pa.
N. Phila. Sta. Penna. R.R.

TRIMBEY MACHINE WORKS

GLENS FALLS, N. Y.

Manufacturers of

WEIGHT REGULATORS
CONSISTENCY REGULATORS
PROPORTIONING AND METERING SYSTEMS
PULP SCREENS—FLOAT VALVES

INDUSTRIAL TYCOL OILS-GREASES

A COMPLETE LINE

OF TYCOL LUBRICANTS SCIENTIFICALLY ENGINEERED FOR EVERY INDUSTRIAL USE

Tide Water Associated Oil Co.
Tide Water Division
17 Battery Place, New York, N.Y.

No. 4 White Linens.	2.25	@	3.25
No. 1 White Cotton.	4.25	@	4.75
No. 2 White Cotton.	3.25	@	3.75
No. 3 White Cotton.	2.50	@	3.00
No. 4 White Cotton.	1.90	@	2.20
Extra Light Prints..	2.00	@	2.40
Ord. Light Prints...	1.75	@	2.15
Med. Light Prints...	1.55	@	1.95
Dutch Blue Cottons.	2.25	@	2.50
French Blue Linens..	3.00	@	—
Checks and Blues...	2.00	@	—
Linsey Garments....	1.90	@	2.00
Dark Cottons.....	1.50	@	1.60
Old Shopperies.....	1.30	@	1.45
New Shopperies.....	1.45	@	1.50
French Blues.....	2.25	@	2.50

Old Rope and Bagging

(Prices to Mill, f. o. b. N. Y.)

Gunny No. 1—			
Foreign	1.75	@	1.90
Domestic	1.75	@	1.80
Wool Tares, light...	1.60	@	1.70
Wool Tares, heavy..	1.80	@	1.90
Bright Bagging.....	1.60	@	1.70
Manila Rope—			
Foreign 2.60		@	2.75
Domestic	2.00	@	3.00
Jute Threads.....	2.75	@	3.00
Sisal Strings	1.50	@	1.60
Mixed Strings....	.55	@	.60

Old Waste Papers

(F. o. b. New York)

Shavings—			
White Envelope Cuttings	2.30	@	2.40
Ordinary Hard White No. 1....	1.90	@	2.00
Soft White No. 1..	1.60	@	1.75
Soft White Extra..	2.25	@	2.40
Flat Stock—			
Stitchless	.80	@	.85
Overissue Mag ...	.70	@	.75
Solid Flat Book...	.55	@	.60
Crumbled No. 1...	.40	@	.45
Ledger Stock White.	1.10	@	1.20
Ledger Stock Colored	.60	@	.70
New B. B. Chips....	.15	@	.20
Manila—			
New Env. Cut....	1.40	@	1.50
New Cuttings.....	1.00	@	1.20
Old Kraft Machine— Compressed bales.	.65	@	.70
News—			
No. 1 White News	1.25	@	1.30
Strictly Overissue.	.40	@	.45
Strictly Folded....	.37½	@	.42½
No. 1 Mixed Paper..	.17½	@	.22½

Twines

(F. o. b. Mill)
(Soft Fiber)

Coarse Polished—			
India	.12¾	@	.14¾
White Hemp.....	.13¾	@	.15¾
Fine Polished—			
Fine India.....	.16	@	.18
Unpolished—			
Box	.09½	@	—
Paper Makers.....	.09½	@	.10½
Tube Rope.....	.10¼	@	.12½
Wall Paper.....	.10¼	@	.12½
Wrapping	—	@	—
Soft Fiber Rope...	.12	@	.14
Cotton	.17	@	.20
(Hard Fiber)			
Medium Java.....	.11	lb	.17
Mex. Sisal.....	.10	@	.16
Manila	.16	@	.23
Domestic	2.65	@	2.75
Sisal Rope	1.75	@	1.85
Mixed Rope.....	.50	@	.60
Transmission Rope...	1.90	@	2.00
Soft Jute Rope	2.00	@	2.25
Jute Carpet Threads.	.75	@	.90
Gunny Bagging—			
Foreign	1.50	@	1.65
Domestic	1.40	@	1.50
Bleachery Burlap....	2.50	@	2.70
Scrap Burlap—			
Foreign	1.35	@	1.40
Domestic	1.25	@	1.40
Scrap Sisal.....	1.65	@	1.75
Scrap Sisal for Shredding	1.80	@	2.10
Wool Tares, Heavy..	1.40	@	1.50
New Burlap Cuttings	2.25	@	2.40
Aust. Wool Pouches.	2.25	@	2.50
Heavy Baling Bagging	1.50	@	1.60
Paper Mill Bagging..	.90	@	1.00
No. 2 Bagging.....	.45	@	.60

Domestic Rags (New)

(F. o. b. Boston)

Shirt Cuttings—			
New Light Prints...	.03¼	@	.03½
New White No. 1....	.06¾	@	.07
New Light Flannelettes	.05	@	—
Silesias No. 1.....	.04¾	@	—
New Black Silesias..	.03¾	@	.04
Soft Unbleached.....	6.50	@	7.00
Blue Cheviots.....	.05	@	.05¼
Fancy	.02½	@	.03
Washable	.02¾	@	.03
Cottons—According to grades—			
Blue Overalls.....	.04¼	@	.05
New Black, soft...	.03½	@	.04
Khaki Cuttings.....	.02½	@	.03
O. D. Khaki.....	.03	@	.03¼
Corduroy	.02¼	@	.03
New Canvas.....	.06¼	@	.07¼
B. V. D. Cuttings...	.06¼	@	.07

Domestic Rags (Old)

(F. o. b. Boston)

Canvas	.04¼	@	—
White No. 1—			
Repacked	—	@	2.75
Miscellaneous	2.50	@	2.75
White No. 2—			
Repacked	1.90	@	2.00
Miscellaneous	2.00	@	2.25
Twos and Blues.....	1.75	@	2.00
Old Blue Overalls...	1.50	@	—
Thirds and Blues—			
Repacked	1.37½	@	1.75
Miscellaneous	1.25	@	1.62¼
Black Stockings.....	3.90	@	4.00
Roofing Stock—			
No. 1.....	1.00	@	1.10
No. 2.....	.75	@	.85
No. 3.....	.65	@	.70

Foreign Rags

(F. o. b. Boston)

Dark Cottons.....	.90	@	1.05
Dutch Blues.....	2.65	@	2.75
New Checks and Blues	2.85	@	3.00
Old Fustians.....	2.25	@	2.50
Old Linsey Garments	2.20	@	2.25
New Silesias.....	3.75	@	4.00

PHILADELPHIA

Domestic Rags (New)

(Price to Mill, f. o. b. Phil.)

Shirt Cuttings—			
New White, No. 1.	.06½	@	.07
New White, No. 2.	.03½	@	.04
Light Silesias.....	.03½	@	.04
Silesias, No. 1....	—	@	.04½
Black Silesias, soft	—	@	.03
New Unbleached..	.05½	@	.06
Washable, No. 1..	.01½	@	.01¾
Blue Overall.....	.04½	@	.05
Cottons—According to grades—			
Washable No. 2...	.01	@	.01¼
New Blue.....	.01	@	.01¼
Fancy Percales...	—	@	.02½
New Black Soft...	.03	@	.03½
New Light Seconds	—	@	.04½
New Dark Seconds	.50	@	.75
Khaki Cuttings—			
No. 1 O. D.....	.03	@	.03½
No. 2 Mixed.....	.02	@	.02½
Corduroy	—	@	.02
New Canvas.....	.05	@	.05½
New Black Mixed.	.02½	@	.02¾

Domestic Rags (Old)

White No. 1—			
Repacked	2.75	@	3.00
Miscellaneous	2.00	@	2.25
Thirds and Blues—			
Miscellaneous	1.00	@	1.25
Repacked	1.50	@	1.75
Black Stockings (Export)	3.00	@	3.50
Roofing Stock—			
Foreign No. 1....	—	@	1.10
Domestic No. 1...	—	@	1.05
Domestic No. 2...	—	@	.85
Roofing Bagging..	—	@	.75

Bagging

(F. o. b. Phila.)

Gunny, No. 1—			
Foreign	1.65	@	1.75
Domestic	1.50	@	1.75
Manila Rope.....	—	@	3.00
Sisal Rope.....	1.50	@	1.75
Mixed Rope.....	.75	@	1.00
Scrap—			
No. 1.....	—	@	1.75
No. 2.....	.95	@	1.00
Wool Tares, heavy..	3.25	@	3.50
Mixed Strings.....	.45	@	.50
No. 1 New Light Burlap	2.50	@	3.00
New Burlap Cuttings	1.75	@	2.00

Old Papers

(F. o. b. Phila.)

Shavings—			
No. 2 Hard White	2.25	@	2.30
No. 2 Hard White	1.90	@	2.00
No. 1 Soft White.	1.75	@	1.80
No. 2 Soft White.	1.30	@	1.40
No. 1 Mixed.....	.65	@	.75
Solid Ledger Stock..	1.45	@	1.50
Ledger Stock, white.	1.15	@	1.20
Ledger Stock, colored	.75	@	.80
No. 1 Books, heavy.	.60	@	.75
Manila Cuttings....	1.45	@	1.50
Print Manila.....	.45	@	.50
Container Manila...	.35	@	.40
Kraft Paper.....	.75	@	.80
No. 1 Mixed Paper..	.22½	@	.27½
Straw Board Chip...	.25	@	.30
Binders Board Chip.	.25	@	.30
Corrugated Board...	.50	@	.55
Overissue News.....	.40	@	.45
Old Newspapers....	.35	@	.40

BOSTON

Old Papers

(F. o. b. Boston)

Shavings—			
No. 1 Hard White	2.25	@	2.50
No. 1 Soft White.	1.85	@	2.15
No. 2 Mixed.....	.75	@	.80
Solid Ledger Books..	1.30	@	—
Overissue Ledger Stock	1.30	@	1.50
Mixed Ledgers.....	.85	@	.90
No. 1 Books, heavy..	.65	@	.75
No. 1 Books, light..	.65	@	.75
Crumpled Stitchless Book Stock.....	.55	@	.65
Manila Env. Cuttings	1.70	@	1.85
Manila Envelope Cuttings, Extra Quality	2.00	@	2.10
No. 1 Old Manila...	.65	@	.70
White Blank News..	1.30	@	1.40
No. 1 Kraft.....	.70	@	.80
Mixed Papers.....	.15	@	.17½
Print Manila.....	.45	@	.55
Container Manilas..	.27½	@	—
Old Newspapers....	.30	@	.37½
Paper Wool Strings.	.50	@	.65
Overissue News.....	.45	@	.50
Box Board Chips....	.20	@	.25
Corrugated Boxes. ..	.35	@	.40
Kraft corrugated boxes	.67½	@	.70
Screening Wrappers.	.40	@	.45

Bagging

(F. o. b. Boston)

Manila Rope—			
Foreign	2.50	@	2.65

CHICAGO

Old Papers

(F. o. b. Chicago)

Shavings—			
No. 1 White Envelope Cuttings....	1.80	@	1.90
No. 1 Hard White.	1.70	@	1.80
No. 1 Soft White..	1.50	@	—
Ledger & Writings..	.75	@	.80
Solid Books.....	.45	@	.50
Blanks	.90	@	—
Krafts	.45	@	.50
New Kraft Cuts.....	1.10	@	—
Manila Env. Cuts...	Nominal		
Ex. No. 1 Manila...	Nominal		
Print Manila	Nominal		
Overissue News.....	.35	@	—
Old Newspapers—			
No. 1 Folded News	.25	@	.30
No. 1 Mixed Paper	.15	@	.20
Roofing Stocks—			
No. 1.....	1.00	@	1.05
No. 2.....	.85	@	—

TORONTO

Paper

Bonds

Direct mill shipment in two-ton lots

No. 1 White $35.50		@	—
No. 1 Tints	36.50	@	—
No. 2 White	25.50	@	—
No. 2 Tints	26.50	@	—
No. 2 Golden Rod..	27.50	@	—
No. 3 White	21.00	@	—
No. 4 White	15.00	@	—
No. 4 Tints	16.00	@	—
No. 4 Golden Rod..	17.00	@	—
Direct mill shipment in three-ton lots			
No. 5 White $10.50		@	—
No. 5 Tints	11.50	@	—
No. 5 Golden Rod..	12.00	@	—
No. 6 White	9.00	@	—
No. 6 Tints	9.50	@	—
No. 6 Golden Rod..	11.00	@	—
No. 7 White	8.00	@	—
No. 7 Tints	8.50	@	—
No. 7 Golden Rod..	10.00	@	—
Book—			
No. 1 M. F.	$7.00	@	—
No. 2 M. F.	6.50	@	—
No. 3 M. F.	5.35	@	—
No. 1 S. C.	7.25	@	—
No. 2 S. C.	6.75	@	—
No. 3 S. C.	5.85	@	—

Coated Book & Litho

Ton Lots (resale)

No. 1 .....$12.00		@	—
No. 2	10.25	@	—
No. 3	8.90	@	—
Coated tinted	13.00	@	—
Wrapping—delivered—			
Rag Brown.....	4.85	@	5.25
White Wrap.....	4.00	@	—
"B" Manila.....	4.90	@	6.15
No. 1 Manila.....	5.50	@	6.90
Fiber	5.50	@	6.90
Kraft No. 2.....	5.50	@	6.90

(F. o. b. Cars, Toronto)

News per ton—			
Rolls (contract)..)46.00		@	—
Sheets 54.00		@	—

Pulp

Ground wood.....$29.00		@	—
Unbleached sulphite.	44.00	@	—
Bleached sulphite...	54.00	@	—
Kraft	50.00	@	—
Soda	54.00	@	—

Old Waste Paper

(In carload lots, f. o. b. Toronto)

Shavings—			
White Env. Cut...	2.00	@	—
Soft White.....	1.75	@	—
White Blk. News..	1.25	@	1.10
Book and Ledger—			
Flat Magazine and Book Stock (old)	.70	@	—
Light and Crumpled Book Stock.	.60	@	—
Ledgers and Writings	1.00	@	—
Manilas—			
New Manila Cut...	1.35	@	—
Printed Manilas...	.45	@	—
Kraft	.95	@	—
News and Scrap—			
Strictly Overissue..	.50	@	—
Strictly Folded....	.45	@	—
No. 1 Mixed Paper..	.30	@	—

Domestic Rags

(Price to Mills, f.o.b. Toronto)

No. 1 White Shirt Cuttings	.06¼	@	.06¾
Light Prints.....	.02¼	@	.02¾